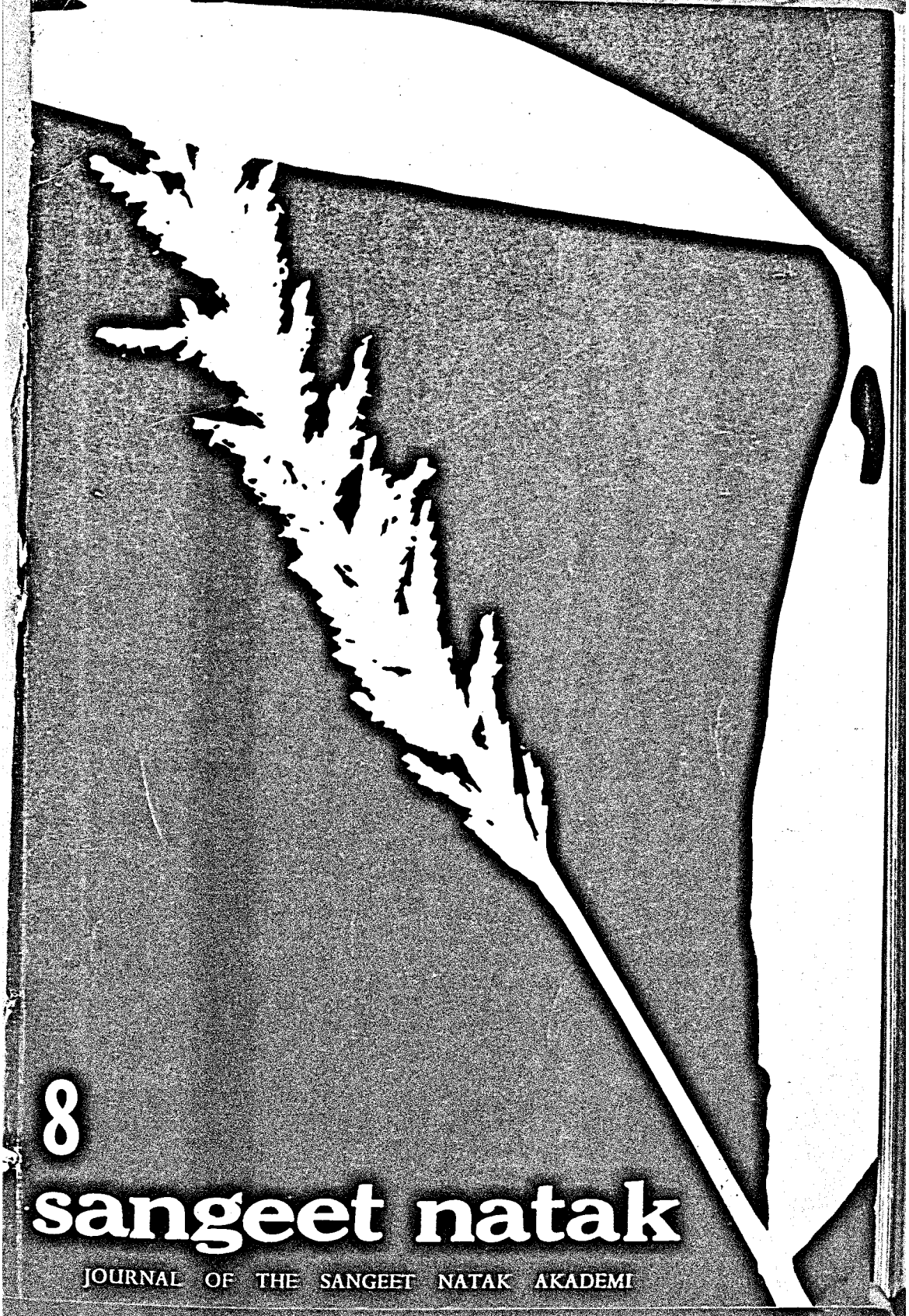




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sangeet natak

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Cover by K. N. Joshi

THEATRE IN VIET NAM

Dr. Tran Van Khe

We should refer to "the theatres" in Viet Nam since, besides traditional styles the *hat tuong*, traditional theatre, and the *hat cheo*, folk theatre, the Vietnamese theatre comprises two other modern styles: the *hat cai luong*, modernised theatre, and the *kich noi* or *thoai-kich*, spoken theatre.

Within the framework of a single article, it is not possible to trace the history of the Vietnamese theatre, nor give all the necessary information about the plays and other theatrical representations. One can only stress what distinguishes one theatrical style from another; or the characteristics of the Vietnamese theatre in comparison with the Chinese theatre from which it derives. A bibliography will help the reader to complete his information. Here we can examine successively the traditional styles, the modern styles and the actual situation of the theatre in Viet Nam.

Origin of Traditional Styles

The *hat tuong* and the *hat cheo*: the *hat tuong* is also called *hat bo* or *hat boi*. This form of theatre which certain people term "classic" has unquestionably descended from the Chinese theatre, whereas the *hat cheo* is of popular origin.

If we refer solely to historical texts, the *hat tuong* had its beginnings under the dynasty of Tran Nhan Ton (1279-1293): a Chinese actor

named Li Yuan Ki (Ly Nguyen Cat) taken prisoner by the troops of General Tran Hung Dao taught the Vietnamese the Chinese theatrical art. No precise indication has been given of the origin of *hat cheo*. Some have seen in the *hat cheo* a popular debasing of *hat tuong*. But according to the most commonly held hypothesis, the *hat cheo* existed before the *hat tuong*. These two theatres differ from each other by the nature of the plays, the material organisation of the troupes, the theatrical technique and the music.

The Plays

As with the Chinese theatre the themes of the traditional plays are taken from Chinese history, whilst the repertoire of the folk theatre comprises plays drawn from Vietnamese history, illustrations of national legends, and social satires.

The plots used in these two theatrical forms are publicly known in advance; the "denouement" is always the same: the good rewarded, the bad punished. But plays of the traditional theatre chiefly exalt loyalty towards the King, a loyalty for which other feelings must be sacrificed. Plays of the Popular Theatre glorify noble sentiments like patriotism, filial piety, conjugal faithfulness and satirise human vices such as cupidity, malice and infidelity.

The plays of the traditional theatre are written, for the most part, in the learned Sino-Vietnamese language. Names of several authors have come down to us, although a great number of plays remain anonymous. Amongst others, we have Dao Tan (1846-1903) who has left more than 15 plays, certain of which are still acted today in Binh Dinh, a province of central Viet Nam where the theatrical tradition has lasted for several generations; Hoang Tang Bi (1883-1930) who was the first to write plays in the language of the people. The plays of the folk theatre are anonymous. There is a preference for using the language of the people; the texts and the melodies are orally transmitted.

Basic Organisation

The setting of the traditional theatre is often a stage 3 x 4 metres, with a backdrop of a large piece of red or blue fabric, surmounted by embroidery, representing two dragons quarrelling over a ball of fire

with the Eight Immortals crossing the oceans on either side. The first theatre building was constructed about 1804 within the very precincts of the Palace in Hue, ancient capital of Central Viet Nam. The *hat cheo* was acted in the market square or the courtyard of the communal house and only a string stretched between two trees or two pillars separated the audience from the actors.

Properties, which were not very numerous in the *hat tuong* and almost non-existent in the *hat cheo*, were not of great importance. The audience's whole attention had to be concentrated on the actors.

The sumptuous costumes of the *hat tuong* resemble those of the Chinese theatre, whilst actors of the *hat cheo* are dressed as villagers, in turban, tunic, silk sash.

Presentation

Duration: A more-or-less long prologue, *giao dau*, precedes each representation of both the traditional and folk theatre. But whilst the first lasts for several days, *tuong pho*, the second does not take longer than one night. Now-a-days, no representation takes longer than 6 or 7 hours.

Theatrical Technique: The *hat tuong* follows the Chinese theatre in its technique: symbolic coloured masks, stylised gestures and expressions, falsetto voices in the rhetorical speeches and "songs" (songs being something between a chant and a melodic song as we know it); battle scenes arranged like ballets. In the *hat cheo* certain conventional gestures, which have evolved due to the absence of scenery, are found every time they are necessary to the comprehension of the play. Make-up is rudimentary; "production" non-existent. The falsetto voice is not compulsory.

The Audience: In a representation of *hat tuong* only the clowns speak to the audience, whereas in a representation of *hat cheo* the public participate in the unfolding of the plot. A newly introduced character asks the crowd: "Must I tell you my name?", and the public reply: "Yes, of course you must!" For representation of *hat tuong* the audience delegates a connoisseur to emphasise the good passages by beating a drum which for this reason is called "drum of praise".

Music: This is the essential element which distinguishes the traditional theatre both from the Chinese and the folk theatre.

The orchestra of the *hat tuong* is composed of a drummer who is the conductor, an oboe, *ken* player, and a two-stringed fiddle player. According to their appropriateness, the drummer uses the battle-drum, *trong chien*, one-skinned drum, *trong bat cau*, and the drum known as "rice drum", *trong com*. Certain orchestras also contain a player of *ho* or a *dan gao* fiddle with a resonator made of coconut shell, a 3-stringed lute, *tam* and a transverse flute, *sao*.

The repertoire of *hat tuong* consists of *Noi loi*, declamations; *Xuong, Bach, Than*, recitations; *hat Khach* or *hat Bac*, songs known as "Chinese" or in the *Bac* style; *hat Nam*, songs known as "Vietnamese" or in the "style of Nam", *hat Bai*, songs particular to a character; and *hat Noi nieu*, varied songs.

There are four kinds of *Noi loi*:

Noi loi xuan or *Noi loi tuong*, a theatrical rhetorical speech used as exposition and to present characters;

Noi loi ai, mournful rhetoric;

Noi loi bop, violently rhetorical speech;

Noi loi giam, everyday speech.

The *Xuong, Bach* are sung by warriors, or the genii, before the *Xung danh*, presentation of characters. The *Than* are lamentations which precede the sad songs.

The songs correspond to definite situations or characters.

There are four kinds of *hat Khach*:

Khach thi, song in septameter verse performed by a warrior, a candidate, or someone taking a walk;

Khach phu, a song in rhythmic prose used in dialogue;

Khach tau ma, a song known as "that of the galloping horse" which is used during scenes of pursuit;

Khách tu or *Khách hon*, death song.

There are three kinds of *hat Nam*:

Nam xuan, song of the person taking a walk, or of sadness restrained and hidden;

Nam ai, di, sad song (slow tempo)

Nam ai, chay, song of distress (quick tempo)

There are several kinds of *hat Bai*:

Bai thang bot, the song of the mandarin's son, with the general sense of the song of the spoilt, irresponsible son.

Bai dien, madwomen's song;

Bai phuong, beggars' song.

According to Doan Nong, there exist 18 kinds of *hat Noi nien*. Amongst others there is the magician's song; the song of the barbarians, the *Moi*; certain folk songs like the *Ho mai day*, boatmen's songs. The *hat Bai* are often considered as *hat Noi nien*, varied songs.

The repertoire of the folk theatre is entirely different. It too contains rhetorical speeches, gay songs, sad songs and songs exposing character, all of which are of popular origin. The rhetorical speeches of the folk theatre are of a recitative nature. One finds the *via* (introduction) and four varieties of *Noi su*, (seriously styled rhetoric); *Su chuc* for the prologues; *Su xuan* of a gay nature; *Su rau* or *Su sau* of a sad nature; *Su van* of a mournful nature; and *Noi lung* or *Noi lech*, rhetoric in a light or gallant style.

For gay situations, songs such as the *Sap* exist, with several varieties; *Sap co phong*; *Sap qua cau*; *Sap dung*; *Luyen Tam Tang*; *Loi lo*; *Cach cu*. For sad scenes, there are songs such as *Ba than*; *Hat van*; *Lan tham*; *Nhip duoi*. There are the *Sa lec*; *Huong xuan*; *Hat dum*; for the love scenes, and for the courting scenes we have the *Cam gia*, the *Binh - Thao*. The buffoons have the *He moi*; *He gay*; the *Sap chot*; the madwomen sing the *Con ga rung*; the *Con chuon-chuon*. The buddhistic monks the *Van mau thien* etc.

The orchestra of the popular theatre consists of a fiddle player, a flutist and a drummer, and one often finds a 3-stringed lute player. To-day, the orchestra of the National Popular Theatre Troupe, in North Viet Nam, comprises 20 instruments when complete.

Amongst the traditional styles of theatre, we should also mention performances of songs and dances given by the *A dao* (kind of professional singers, whose functions correspond to those of the Japanese *Geishas*). As well as their repertoire of chamber music, they often perform dances with flower lanterns, *mua bai bong*, and act in sketches. These go under the name of *hat bo bo* or *phuong nha tro*.

New Styles

Hat cai luong, modernised theatre;

Kich noi or *Thoai kich*, spoken theatre.

In 1918 a new style of theatre appeared under the name of *hat cai luong*, but within the limits of this article we cannot relate the circumstances which had given rise to it. Just what does this modernisation consist of?

The plays have changed both in essence and in form, the themes being chosen not only from Chinese but from Vietnamese history, from novels, from the history of the various religions, or from everyday life. The plays, divided into 4 or 5 acts, are written in the language of the people.

The setting is adorned with a curtain and scenery, and more and more theatrical properties are being used.

Photographs: P 11: *Hat Cai Luong*, modernised theatre showing warrior (Mrs. Phung Ha) and young lady (Miss Kim Cuong) in "Phung Nghi Dinh". P. 12. 1. *Hat Cheo*, folk theatre, Thi Man tries to seduce the disguised Thi Kinh not knowing she is a woman, in "Quan Am Bo Tat". 2. *Hat Tuong*, traditional theatre, showing three characters, Happiness, Prosperity and Longevity opening a performance at the Court Theatre.





There is an attempt to become more natural and the conventional gestures and stylised attitudes are now only to be found in historical plays.

The repertoire is entirely different from that of the traditional theatre. The music of the *cai luong* is nothing more than that of "amateurs"; a kind of chamber music to which are set words suitable to the situation. The pieces of *Bac* are for light scenes, and the *Nam* pieces for sad scenes. Little by little, Chinese and European songs are being adapted.

This theatre, born in 1918, after an initial phase of "feeling its way", went through a flourishing period (1924 — 1945) during which the actors Nguyen Thanh Chau, alias Nam Chau; Huynh Thu Trung, alias Tu Choi; Ba Van; Bay Nhieu; Tu Anh; Duy Lan; and the actresses Nam Phi; Phung Ha; Kim Thoa raised the modernised theatre to an artistic level.

Several tendencies are noticeable: the return to the traditional theatre in the borrowing of ideas, of gestures and repertoire from the Chinese theatre; the imitation of the Occident in the comedies of manners or social plays, in the cloak-and-dagger type of play, gratifying the audience's taste by mystic plays whose theme is the life of Buddha. During the period of the war in Viet Nam (1945-47) the theatre was inactive, reasserting itself with the *Cac bum* type of play, (*Cac bum*: onomatopoeia of gunfire with the modern war as its theme), social plays and adaptations of traditional Western plays ("Hamlet", "The Merchant Of Venice"). In 1953 the presentation of a play in verse, "*Tay - Thi*" ("The Beautiful *Tay Thi*") by Hoang Mai Luu, by the Nam Chau Troupe constitutes an event in the history of the modernised theatre. The first play in verse with a ballet and modernised songs was undoubtedly *Tuc-Luy* or the *Fallen Fairy*. This play, written by Khai Hung and The Lu and set to music by Luu Huu Phuoc was first performed in Hanoi by the pupils of the Lycee Dong Khanh in 1942 and in Saigon by the pupils of the Lycee Gia-Long in 1943. But it was not until 1953 that performances given by the Nam-Chau Troupe stimulated the general public's interest in this new kind of theatre. The modernised theatre has not undergone such a marked development in North Viet Nam as in the South.

The Spoken Theatre

On the 25th, April 1920, according to Song Ban, (1921 according to Dao-duy Anh). the first performance of the play *Benh Tuong*, a translation of Moliere's *Le Malade Imaginaire* took place at the Municipal Theatre of Hanoi. It met with moderate success. The Vietnamese public who cannot conceive a theatre form without songs do not welcome the spoken theatre with enthusiasm. About 1935, "the Association des Amis de l'Art" animated by Claude Bourrin, a French actor, presented other translations or adaptations of Moliere's characters, having Vietnamese names, dressed in Vietnamese costumes enacting their roles before a Vietnamese decor. But the efforts of "The Association des Amis de l'Art" and of the "North Vietnamese Stage" were not crowned with success; according to Bay Nhieu, an accomplished actor, the adaptation of Moliere's *L'Avare* was performed by some amateur actors in South Viet Nam about 1917-18, at the same time as a play inspired by Victor Hugo's novel *Les Miserables*, had no success. In 1942, 1943 plays of the spoken theatre, written and acted by students of the University of Hanoi were sympathetically received by the public of Hanoi and Saigon. We quote *Dem Lam-Son* by Hoang Mai, retracing the struggle led by Le Loi, founder of the former Le Dynasty, against the Ming, at the beginning of the 15th century; *No Me Linh* by the same author, glorifying the heroism shown by the two Trung sisters in their fight against Chinese domination. But the general public have not yet been won over by the new style.

We had to wait until 1945-46 before we saw the spoken theatre flourish with revolutionary inspiration.

Then came a long period of the war for Independence during which the training of traditional actors was rather difficult. The peoples' artists had to build up plays to "maintain the morale of the population and soldiers", in a very short time they were trained in the Stanislavski method, and short plays were written to praise the sacrifice of the soldiers, to criticize the "collaborators". Among others, we can mention: *To Hieu* by Nguyen Cong My (To Hieu was the name of a Communist who died in the prison of Sonla), *Bac Son* by Nguyen Huy Tuong, telling the progress of the people's insurrection in Bac Son in 1940-41.

In the villages, in the battle units and later, in the factories, bands of spoken theatre were created and the general public got used to that new style.

Now-a-days, traditional theatre is declining. In Saigon one single troupe of traditional theatre is giving rare performances. In the city of Binh Dinh a few small bands are perpetuating the traditional art. But they have had to stop their performances because of the attacks of the bombing.

The modernised theatre is still appreciated by the general public. But in spite of the attempts of the great artists like Mrs. Phung Ha, M. Nam Chau, Duy Lan, Ba Van, it is passing through a crisis. Many new styles were created: *cac bum* (onomatopoeia noises of guns used for a play about the modern war), *la ma* (literally means 'Roman': used for plays with themes taken from Japanese, Indian or Chinese history), but they have no artistic value. Short plays of spoken theatre are presented with modern songs as different items of a music-hall programme.

In North Viet Nam, though the traditional theatre and modernized theatre are less popular than the folk theatre (*hat cheo*), all the styles are taught at the National School for dramatic arts. *Luc Van Tien* (name of faithful lover) and *Mau Don Tien* (of the a "Love of a Fairy,") were created with great success by the National Troupe of modernized theatre. Besides the National Troupe of folk theatre in Hanoi, there are several other small bands in the provinces: seven hundred troupes in Hai Duong. Modern plays are written for the spoken theatre, and western operas and ballets are performed by the Vietnamese singers and dancers.

Both in South and North Viet Nam, the creation of a national school for dramatic arts, the increasing number of the public for different types of theatres allow us to hope for a better development of the theatrical art in Viet Nam. But we can fulfil the promotion of musical and theatrical arts only when peace returns to a troubled land.

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Dr. Tran Van Khe, Assistant Director, Centre for Oriental Studies, Institute of Musicgyolo, Paris; Member Executive Committee, International Music Council, UNESCO. See *Sangeet Natak* 2.

KOOTTAMPALAM SANSKRIT STAGE OF KERALA

Goverdhan Panchal

The temple in India played an important and varied role in the life of the people. Society being religious-based the temple was chiefly built to meet the entire needs of the community.

While its construction provided scope for the aesthetic self-expression of master-builders, sculptors, painters and common workmen for years, the daily temple ritual provided a livelihood to a large number of people of various communities — the *pujaris*, *brahmana*, goldsmiths, tailors, musicians and manual workers. It acted as banker to the needy agriculturist and gave a living and occupation to farmers who tilled the temple lands.

It met the moral needs of the people as they gathered in the great courtyard or the halls to hear the *kathas* from the *Epics* and the *Puranas*, and the three R's were taught in the *pathshalas* — schools attached to the temple. The elders met here to discuss local disputes and routine affairs.

On festive days people from far and near gathered here to partake in the general merriment. To the fairs that were held on such occasions around the temple, came traders and merchants and artisans to sell, buy or barter their wares. And here came the minstrels, the actors and the acrobats to amuse the crowds.

To the more important temples were attached the “*natya-mandapas* — temple theatres — where *nritya*, dance, and *natya*, drama, were performed as votive offerings to the gods. These provided both moral education and aesthetic enjoyment to the sophisticated and cultured as also to the common man.

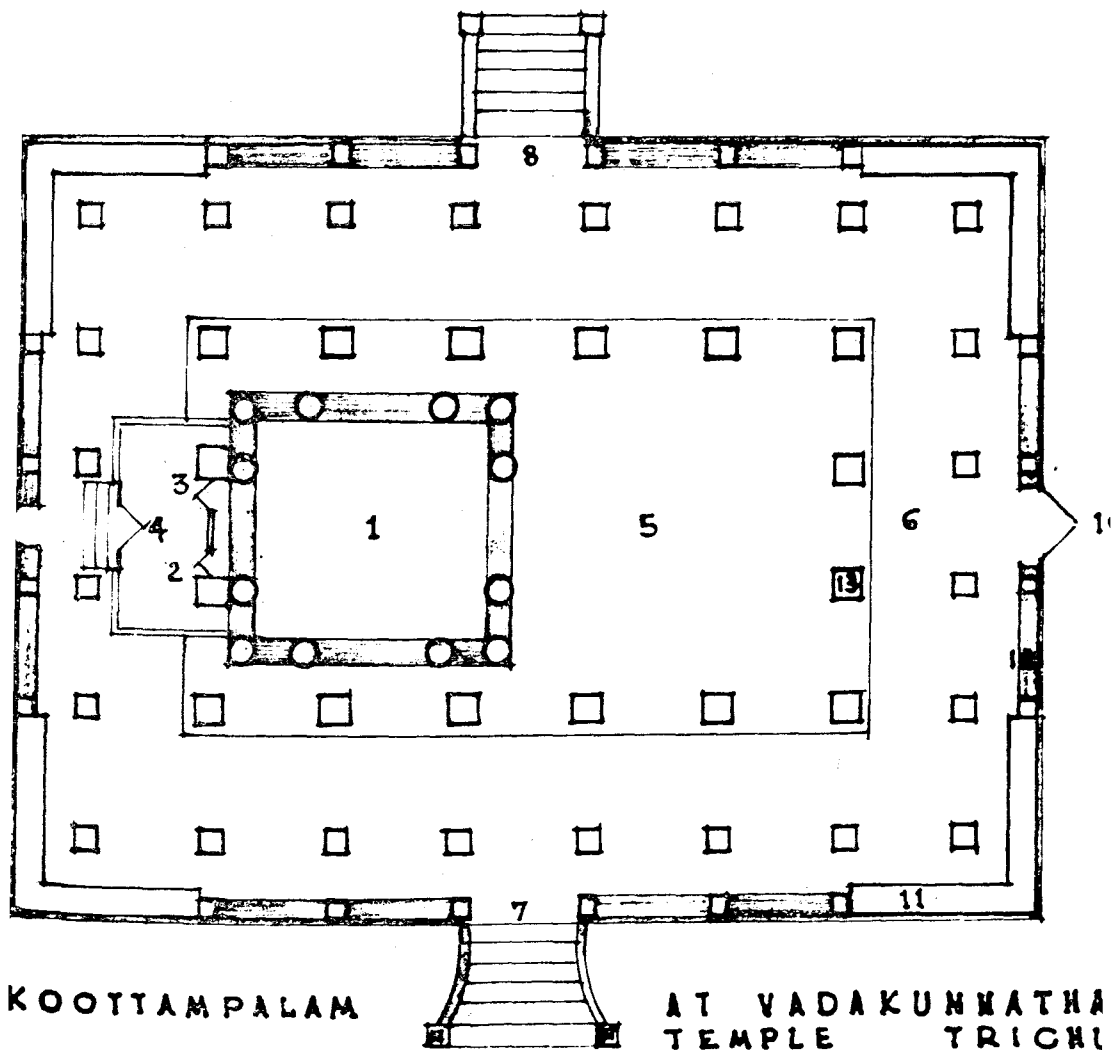
Such temple theatres called Koottampalams in Kerala are still to be found from the north to the south. Some important ones are no longer in existence but there are still a large number of them that attract the notice of the serious minded. Some of these are in active use, quite a few in disuse, but most are unfortunately in a state of utter neglect, uncared for alike by the people who no longer have the former religious zeal and by the Devaswam Boards under whose jurisdiction the temples have been placed. Nor does the State bother about this ancient institution that played so vital a role in the moral and cultural life of the people. These Koottampalams in which the regional Sanskrit drama—the Kootiyattam—is played need to be rediscovered and rejuvenated for the sake of a true understanding of our traditional Sanskrit theatre about which many have but the vaguest notion.

Types of Structure

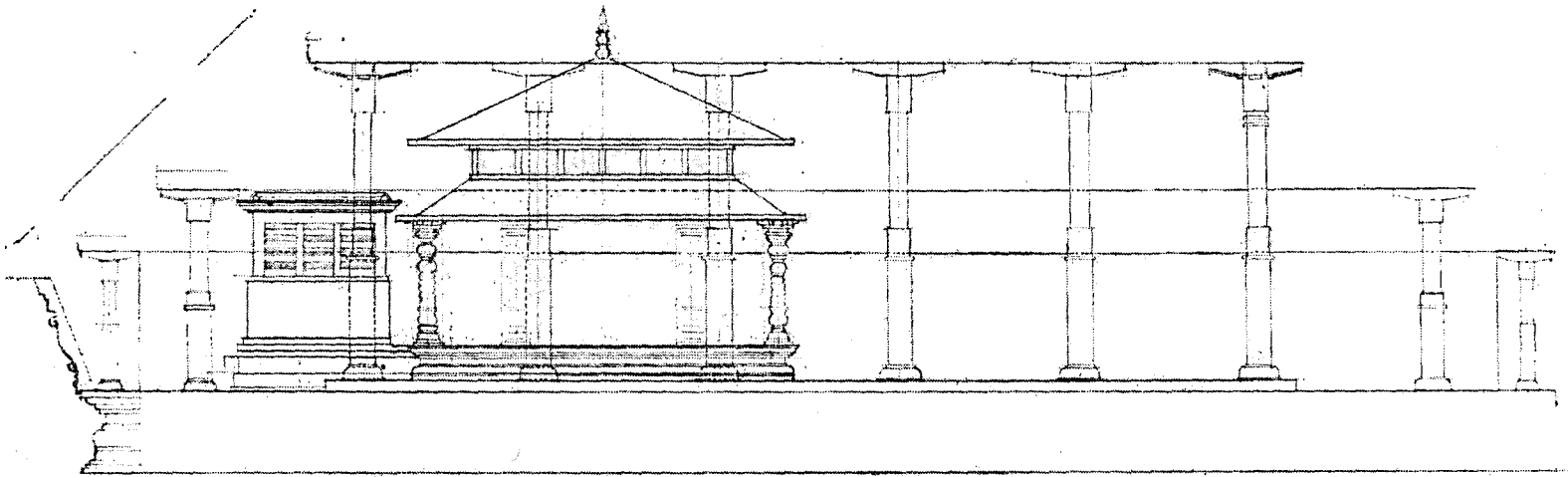
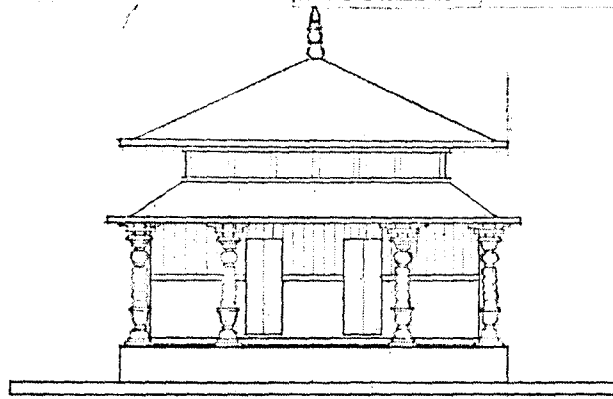
The deity in a Kerala temple faces east or west though in some cases also to the south. But whatever the direction the deity faces, the Koottampalam is always to the right side of it.

These Koottampalams are largely of a rectangular shape. But the one at Chengannur was egg-shaped. Unfortunately only the stone pedestal remains now as the superstructure is destroyed. Luckily a model of this Koottampalam is preserved in the Trivandrum Museum. There is also one of the “corner type” in existence at Tripunithura.

Most rectangular type of Koottampalams appear to follow a similar pattern essentially, though variation in details are not lacking. Again, though the creators of these temple theatres seem to be familiar with theatres described in the *Natyashastra*, they do not follow Bharata in a few essential physical details. Just as the Kootiyattam is the regional form of presentation of the traditional Sanskrit drama, the



Ground Plan: 1. Stage with round pillars at corners; 2-3. Entrances to stage from dressing room; 4. Entrance to dressing room from back of auditorium; 5. Raised Brahmana level of auditorium; 6. Auditorium; 7-8. Main entrances to auditorium; 9. Back entrance to auditorium used by actors; 10. Front auditorium entrance used at times by characters during performances; 11. Corner walls; 12. Wooden trellis-frame "walls"; 13. Pillars.



Top : Front elevation of stage ; Bottom : Cross-section of Kootampalam showing stage, dressing room, Brahmuna level, auditorium floor and various pillars.

[For this article sketches are by G. Panchal assisted by S. Chaudhuri and photographs by Dev Mohapatra — National School of Drama, May 1957]

Koottampalam is the regional derivation from Bharata's theatre. Both retain the spirit of the Sanskrit tradition.

The Koottampalam can be said to have three main parts: the roof, the main body and the stone socle — *adhishthan* — on which these rest.

From the outside the most dominant feature of the Koottampalam is its roof. It is an enormous rectangular flat structure, steeply sloping downwards ending in fly-up edges with four hooded snake designs at the four corners, their tails meeting at two points on either side of the roof-line finished off with three *kalashams*.

The Roof

The roof is either single as at the Koottampalam at the Vadakunathan temple at Trichur and the Kudalmanikam temple at Iringyalkuda; or is double, as the one at the Krishna temple at Guruvayoor, and the Subramanian temple at Haripad. The ridge of the double roof runs breadthwise, terminating in a triangular gable-end and latticed to allow the flow of light and air. The roof, single or double, is either copperplated and composed of small rectangular shapes arranged in parallel lines or is tiled with decorative flat tiles. It covers some two-thirds of the entire structure.

The roof is supported on beams resting on rows of small-sized pillars. Between these outer-most pillars are set frames with horizontal and vertical members with gaps in between forming a sort of trellis "wall". The pillars and the trellis wall rest on the flat surface of the stone socle — *adhishthan*, — running on all sides of the structure. On these also rest the slanting brackets when they are used as additional supports for the roof. These gracefully curved brackets are delicately designed or are plain, depending on the pattern followed in the entire Koottampalam.

The Auditorium

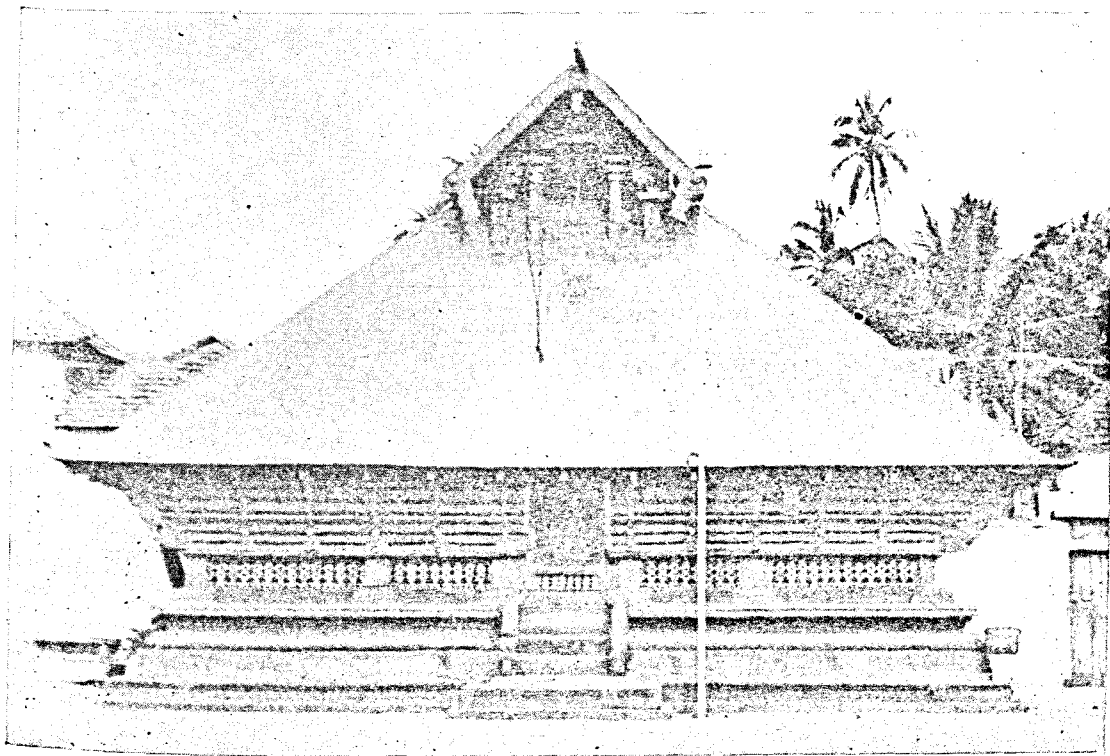
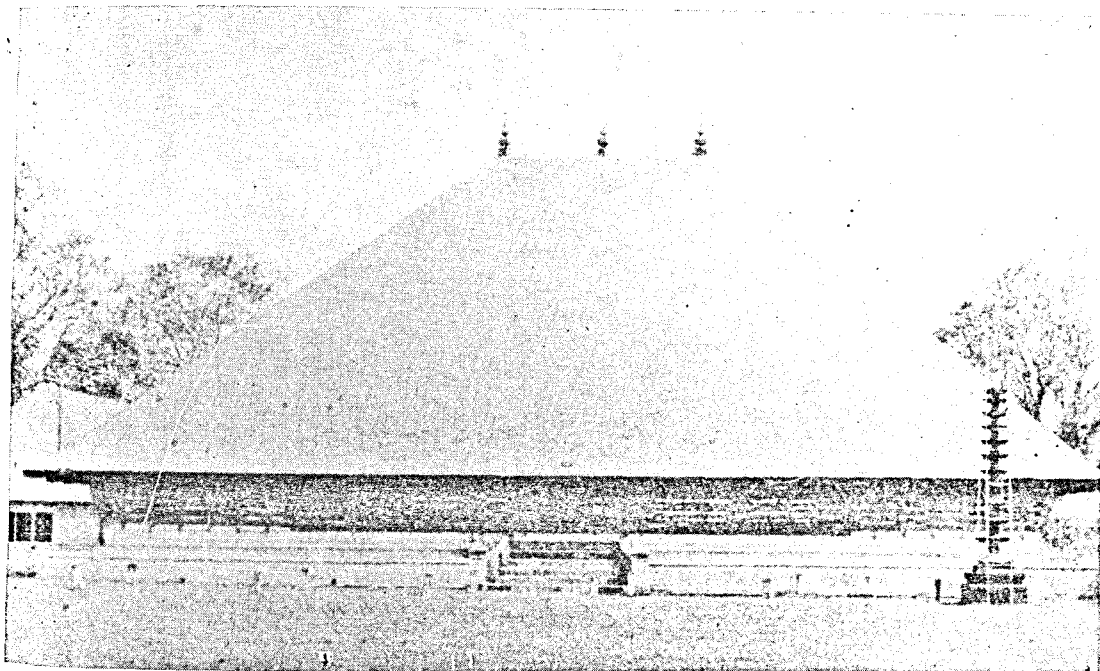
The moulded heavy stone socle of the super-structure, is hollow, about a foot and a half wide filled with earth and rubble to form the auditorium floor, which, in earlier times must have been smeared with cow-dung, but now is cemented.

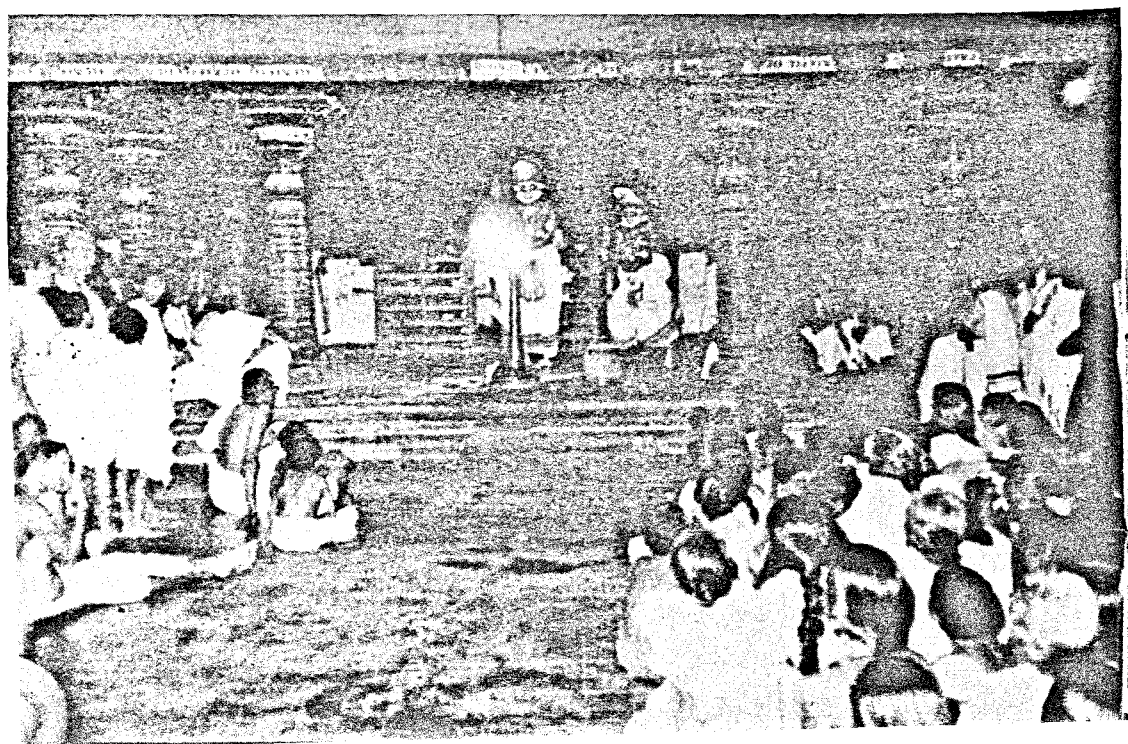
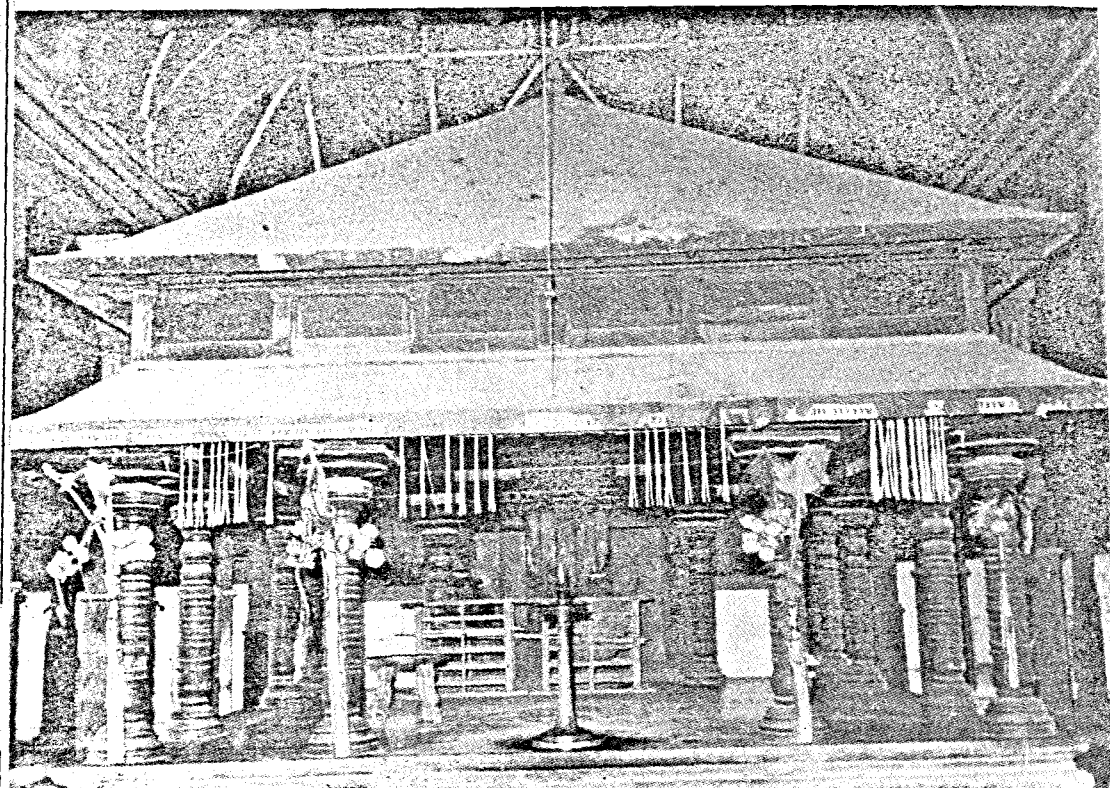
A flight of four or five steps leads to the two main entrances to the auditorium, the front one usually used by men and the one opposite, by women. There are two narrow entrances, usually at both the short sides of the rectangular auditorium used by the actors before and during the performances.

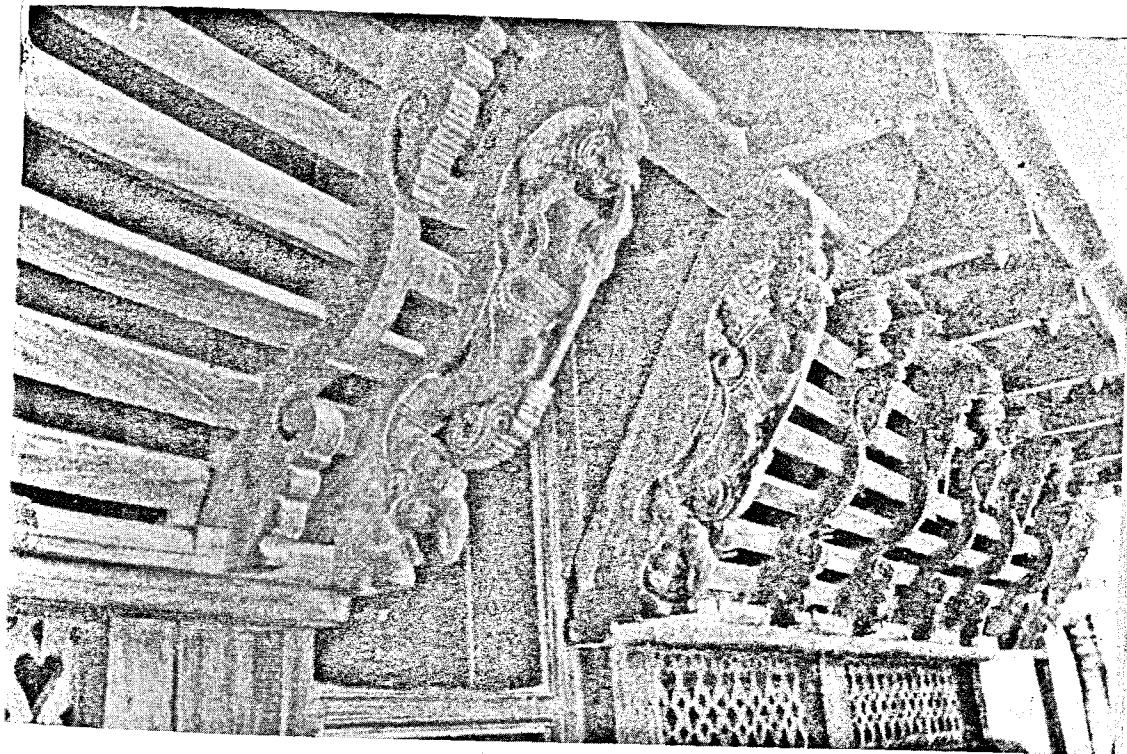
The auditorium is at times one flat level, though when there is a raised level, it is but a few inches high, in front of the stage in some cases reaching beyond the stage on either side. In days gone by, the front of stage, raised or not, was always reserved for the *brahmanas* and the rest was used for the standing or sitting of the common people. But now-a-days everybody sits anywhere, irrespective of caste, though the men sit on one side and the women on the other.

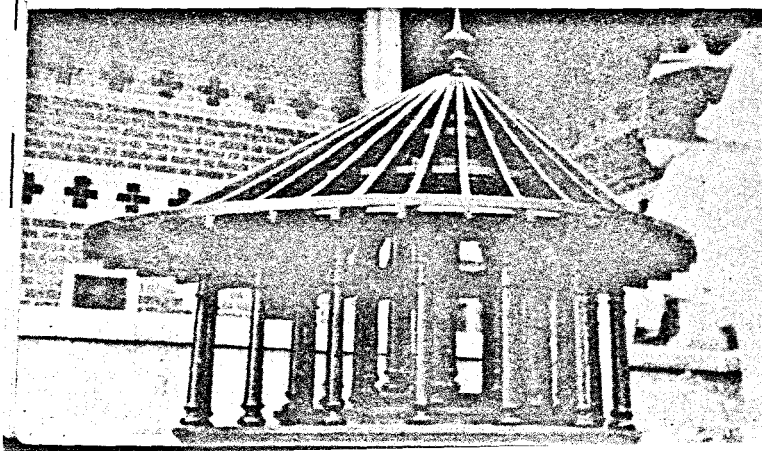
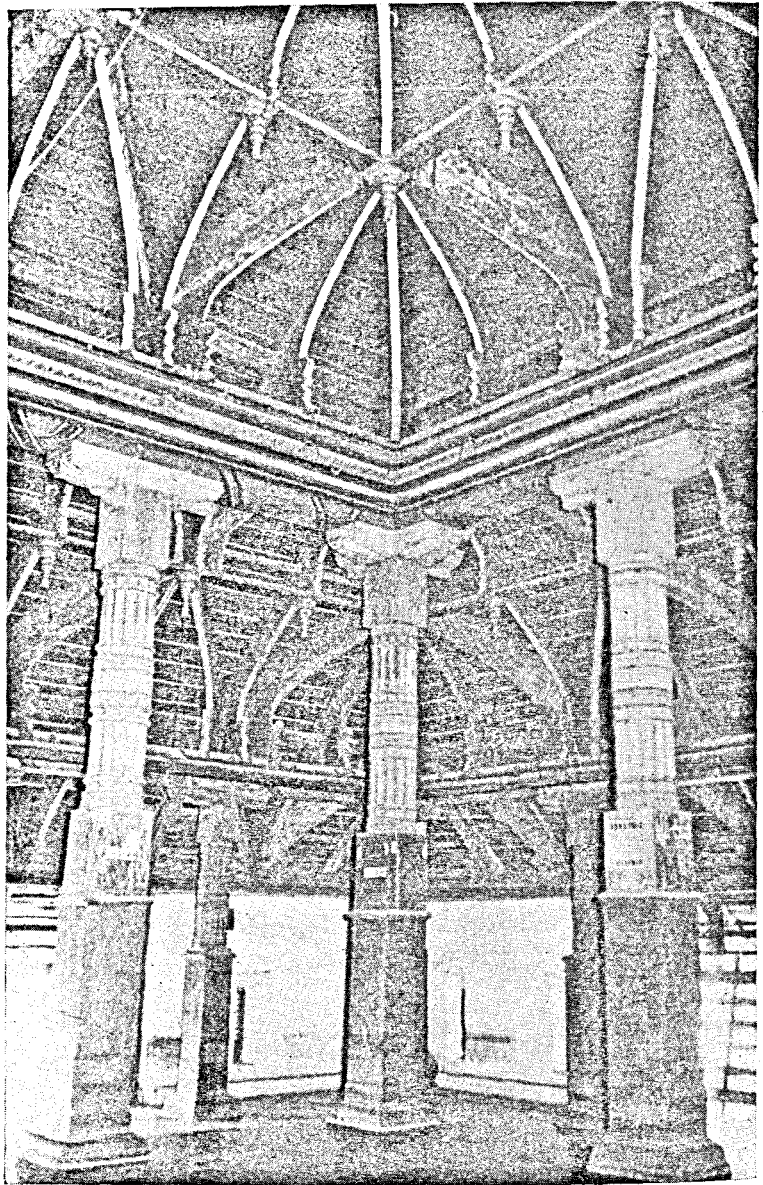
Standing in the centre of the auditorium, one finds rows of large pillars on either side, front and back, and yet similar other rows of medium-sized pillars beyond which are the rows of small pillars mentioned earlier. In small Koottampalams there are only two rows of pillars. The pillars are either of wood or of stone, have a square stone base even when the pillar is of wood, with a square plain prism over which there is a fluted ornamented shaft ending in a capital. The capitals of the large pillars support the main beams over which rest the flat-backed but inwardly concave-shaped brackets fanning out from points in groups of three ultimately supporting the central beam of the auditorium ceiling. Similar groups of brackets move downwards from the large pillars and meet the beams on the medium-sized pillars. From this again a further group of brackets go down to meet the beams on the small pillars. Over the flattened backs of the concave-brackets are laid horizontal bars forming the roof which from the outside is copperplated as mentioned earlier. The roof from the outside looks a cave-like structure due to its low construction and from the inside due to its concave-shaped brackets. All the brackets, outside and inside and other members are held together by rounded

Photographs: P. 23. 1. The building, front view. Note lamp—*deepmala*. 2. Side view.
 P. 24. 1. The stage showing inner canopy roof and distinctive stage pillars.
 2. The performance; note oil lamp.









decorative hangings of turned wood as no nails are said to have been used in the entire building.

The Stage

The stage, which is usually square or nearly square is a raised platform at one end of the *brahmana* level. It is so placed as to face the deity, and the actor always performs facing the god. It also has a moulded hollow stone base, which was filled again like the auditorium, with earth and rubble and plastered with cow-dung, in earlier times, but now cemented. On this stone base, in each corner, usually stands one pillar of turned wood and lacquered in bright red, though in the case of Trichur Koottampalam there are three pillars in each corner. These support the roof over the stage. Thus, there is a roof within the main roof of the auditorium. This roof is again, a single one, flat at the top or a double one, ending in a *kalasham*. The entire ceiling under the stage roof is highly ornamental.

Green Room

At the back of the stage is the wall of the dressing room — *nepathya*. It is pierced by two narrow doors for entries and exits from and to the *nepathya*. Between these doors or a little off-centre, so as to leave the entrances and exits free, are placed two huge egg-shaped copper drums — *mizhavus*. They are placed in large square or rounded wooden frames.

The *nepathya* is a narrow, often a stuffy rectangular room running breadthwise to the stage, sometimes constructed entirely of wood or has upper half of wood resting on brick walls with narrow *jalis* for air. The light in the *nepathya* is provided by a bell-metal lamp during makeup and costuming.

The *nepathya* floor is always lower than the stage floor, often on the same level as the auditorium floor, but at times in between the stage and the auditorium floor. The stage is reached by a small stone step placed near each door.

Photograph : P. 25 1. Carved wall brackets. 2. Steps at entrance to building showing details of carving. P. 26. 1. The auditorium pillars; note ceiling. 2. A model.

The massive stage pillars of turned wood standing on a circular base, with pot-like rounded forms in diminishing sizes ending in capitals, and lacquered in brilliant red with thin black lines, delineating each form, supporting a roof with an intricately and delicately carved ceiling, with flower motifs and gods and goddesses and *ashta-digpalas* looking like a large flat-bottomed upturned square vessel, seem to serve three main purposes: the ritualistic, the aesthetic and the scientific.

The play is a ritual to propitiate the god under whose benevolent and merciful gaze it is performed and therefore to lend the necessary sanctity to the stage, its ceiling may have been carved with figurines of gods and goddesses. Bharata has given the duties to various gods of guarding the stage from the evil *asuras* and it may be that when permanent theatres were constructed this idea was symbolised in the form of figures carved in the stage ceiling. In any case, the divine presence in symbolic form was considered necessary during the presentation of the play.

The Pillars

The stage pillars are entirely different in design from the auditorium pillars, because their function is totally different. Their rounded glossy form helps the eyes of the audience, sitting at different angles, to glide over them and lead on to the action on the stage. These pillars and the over-head low roof of the stage, further, tend to enclose, frame and emphasise the actor. The triple flame of the bell-metal lamp which is the only source of light, highlights the actor and envelops him in its gentle glow making everything else on the stage recede in dimness, complementing by contrast, the far-away atmosphere the actor creates with his highly stylised action, his make-up, his costume and the Sanskrit verses he recites to befit the rhythm of the various emotions — *bhavas*.

Further, these pillars in red lacquer and delicate thin black lines harmonise with the dominant upper jacket-like garment of red and black stripes of the actor in its colour and pattern, and also with the rounded lines of his ornaments, make-up and head-gear. The glossy smooth surface of the pillars, though dulled by usage and age, presents a pleasing contrast of texture with the fluffiness of the upper garment and the glitter of the gold ornaments, and their delicate design contrast with the severe and massive pillars.

Acoustics

The stage ceiling, very intricately carved in all the Koottampalams, in contrast to other elements inside the theatre which are less ornate and in many cases are quite severely designed, raise a pertinent question. The question becomes persistent as one ponders why the ceiling has been given such close attention by the master builder — *sthapati*. The question acquires an edge when one finds that even in broad daylight the cave-like interior of the theatre is somewhat dim and the beautiful carvings on the ceiling of the stage can hardly be discerned even in such light without the help of a torch. Was it then purely for the fulfilment of the ritualistic requirement? It could be. Or was it to satisfy the aesthetic urge of the *sthapati*? Possibly. Or was it not to fulfil a more compelling function which is of the utmost importance to the theatre, namely, the effective projection of sound from the stage?

The ceiling and the breaking up of its surface into uneven ornamental sections greatly enhances its acoustic quality. But for the roof and the ceiling, the emotionally charged voice of the actor might have been lost, in the great height of the auditorium. But for the roof, the stature of the actor himself would have been greatly reduced. This thought too must surely have weighed with the creators of these Koottampalams, who seem to be aware of Bharata's injunction to the *sthapatis* of the theatres that sound must be preserved by taking various things into account, such as the cave-like structure; no cross-winds that would disturb the sound; small windows; not too large a theatre, etc. The acoustics in the Koottampalams are excellent which shows how well the *sthapatis* had mastered this and various other problems facing theatres in those ancient times and so lamentably remind one of the architects of the present day in India with their lack of understanding of the essentials of theatre architecture.

Ideal Form

Here then is the picture of a theatre constructed centuries ago for presenting Sanskrit drama which was staged then, as it is today. The *Chakyars* — the hereditary actors of Kerala — have been staging Sanskrit plays, Kootiyattam, in these theatres at least from the 9th century onwards, from the time of the Kulshekharavarman, the Perumal then ruling

Kerala. Only a very few of these Koottampalams perhaps are more than three or four centuries old, but the similarity of essential features would indicate a continuity of tradition going far back in the past. Some of the confusion in the interpretation of the second chapter of Bharata's *Natyasastra* on theatre-buildings could perhaps have been avoided had the existence of these Koottampalams been more widely known beyond Kerala.

The stage of the Koottampalam is highly functional, and is utterly simple. It is ideally suited for the Sanskrit plays which demand imagination for their enjoyment. A raised stage with two doors for entries and exits, one or two stools to be used for sitting and other stage business, and a curtain—*yavanika*—brought in by two persons, is all that is provided by way of props. With these bare elements and a few other properties—bows, arrows and swords—the actor paints pictures in vivid colour with the help of *abhinaya*—stylized facial expressions, *mudras*—hand gestures, rhythmic body movements and dance.

This ancient stage form is the traditional version of the thrust or the peninsular stage, a form considered ideal by some in our era as the stage of our times: ideal for the live actor-audience relationship provided by the audience sitting on three sides of the stage; ideal for the actor who is seen in all his three-dimensional roundness and yet maintains the presentational form of his art through his action, costume and make-up. Here is a theatre rooted in its soil and firmly established for a millenium and more, challenging the imagination of the men of theatre today who might care to study and absorb this tradition to find the inspiration to create a new dramatic vision.

Goverdhan Panchal received his training at Santiniketan and worked as Scenic Designer for some ballets of Indian National Theatre, Bombay. He held the position of Principal of Nartan Sikshapeeth and Art Director of the Bharatiya Vidya Bhavan, Bombay. At present he is working as Asstt. Professor of Theatre Architecture, Costumes and Scenic Design at the National School of Drama and Asian Theatre Institute, New Delhi.

GOTIPUA DANCERS OF ORISSA

Sunil Kothari

Gotipua is the name given to a class of boy dancers in Orissa who, dressed as girls, perform the traditional classical Odissi dance. These young acolyte dancers have been, albeit unconsciously, of great service to the continuation of the tradition thus in a sense, making possible the revival of the classical Odissi style in its present form. It is interesting to learn that some of the prominent Odissi *gurus* of today were Gotipua dancers in their youth.

It is believed that this tradition came into being at the time of the great saint and singer Chaitanya. Chaitanya's religious discourses greatly influenced the masses. Vaishnavism spread all over Orissa during the reign of King Purushottam Deva. In 1447 A.D. Purushottam Deva's son, Prataprudra Deva, was ruling over Orissa. He was a devout Vaishnava king and ordered that only the *Gita Govind* text should be sung in the temple of Jagannath at Puri. It was Ramananda Pattanaik, his Minister, who was mainly responsible for this measure. The Minister had given up his Governorship of Rajahamundry after he came in close contact with Chaitanya. The Saint had changed the course of his life. Pattanaik then devoted the rest of his life in the service of Lord Jagannath and later came to be known as Ramananda Raya.

Sakhi Bhava

Vaishnavism brought in its wake the cult of *Sakhi Bhava*, the religious belief propounding that God could be approached only through ecstatic devotion as in the manner of the *gopis* who worshipped Lord Krishna. The story of the preacher Gonsaiji and his encounter with the Vaishnava Saint, Meera, is often quoted to illustrate the cardinal belief of this cult in which the Lord alone is *Purush* (male), and all devotees *gopis*. Gonsaiji had taken so strict a vow of celibacy that he would not look upon the face of any woman. If he had to meet a woman, he could only do so with a screen between them. When he learnt that Saint Meera had arrived in Vraja, he went to meet her, but was careful to keep the screen between them. Meera reminded him of the cardinal principle of the Sakhi cult and that she believed there was only one *Purush* in Vraja—the land of the *gopis*. She maintained that if Gonsaiji had remained *Purush* in spite of staying in Vraja, his *bhakti* (devotion) must have made him oblivious of the fact that Lord Krishna alone is *Purush*. On hearing these words of sarcasm from Meera, Gonsaiji realised his folly and touched the feet of Meera.

Ramananda Raya was a devout Vaishnava of this extreme cult and encouraged worship according to *Sakhi Bhava*. It was he who introduced the custom of the temple dances being performed by boys dressed as girls and not by women, as was the custom elsewhere.

Seven Streets, Akhadas, Gymnasia

Such were the origins of Gotipua dancers but historically speaking, Gotipuas as an established class only came into existence during the time of the Bhoi King, Ramachandra Deva in 1600 A.D. almost two hundred years later. Ramachandra Deva was a great devotee of Lord Jagannath and personally supervised the rituals connected with the temple. He considered it his prime duty to protect the temple and the town from intruders and regulated the rituals of *sebayatas*, the class of priests performing *seva* — services — in the temple. He built, near the temple, seven streets for these *sebayatas*. There were several categories among the priest-hood of which one was that of the Gotipuas.

Ramachandra Deva's interest in physical culture resulted in the establishment of Gymnasia in several parts of the town. These Gymnasia

were like clubs — *akhadas* — which also became the centre of cultural activities. It was in these *akhadas* that Gotipua artistes were taught dancing. Several Gotipua dancers were attached to each *akhada*, and hence the name *Akhada Pila* for Gotipua dancers. To this day there is an unbroken tradition of *Akhada Pilas* belonging to professional Gotipua troupes. Generally such groups are conducted by a particular *guru*.

Arduous Training

The training in physical culture and dancing for the chosen boys begins at the age of seven and continues till the approach of adolescence when the boys lose their delicate appearance. Generally they do not perform as Gotipuas after eighteen but they then become conductors or teachers and continue teaching Odissi dance. While supple, the young boys are taught various bends and acrobatics, their bodies being trained through difficult physical disciplines. The training is rounded off with music, singing and the playing of drums.

An essential feature of their dancing is the singing which accompanies the dance. Hence great emphasis is placed on the cultivation of breath control, as singing while dancing simultaneously, is very strenuous. Now-a-days however, very few of the boys sing while they dance.

A remarkable feature of their dancing is the use of several *bandhas* — acrobatic feats — which are now not performed by Odissi dancers though they are mentioned in various palm-leaf manuscripts pertaining to dance. Some of the *karanas* mentioned in Bharata's *Natyashastra* are thus found in vogue in Odissi dance. Thus, barring these *bandhas* their repertoire is the same as in Odissi dance, making use of various *pada bhedas*, *bhangis*, *beli hastas* etc.

It is necessary to remember that it was with the advent of the Gotipua dancer that Odissi dance came out of the temple precincts and began being performed in public. If we are fortunate enough to see Odissi as a part of the repertoire of present-day dancers, it is largely due to these acolytes who carried on the art and preserved the tradition.

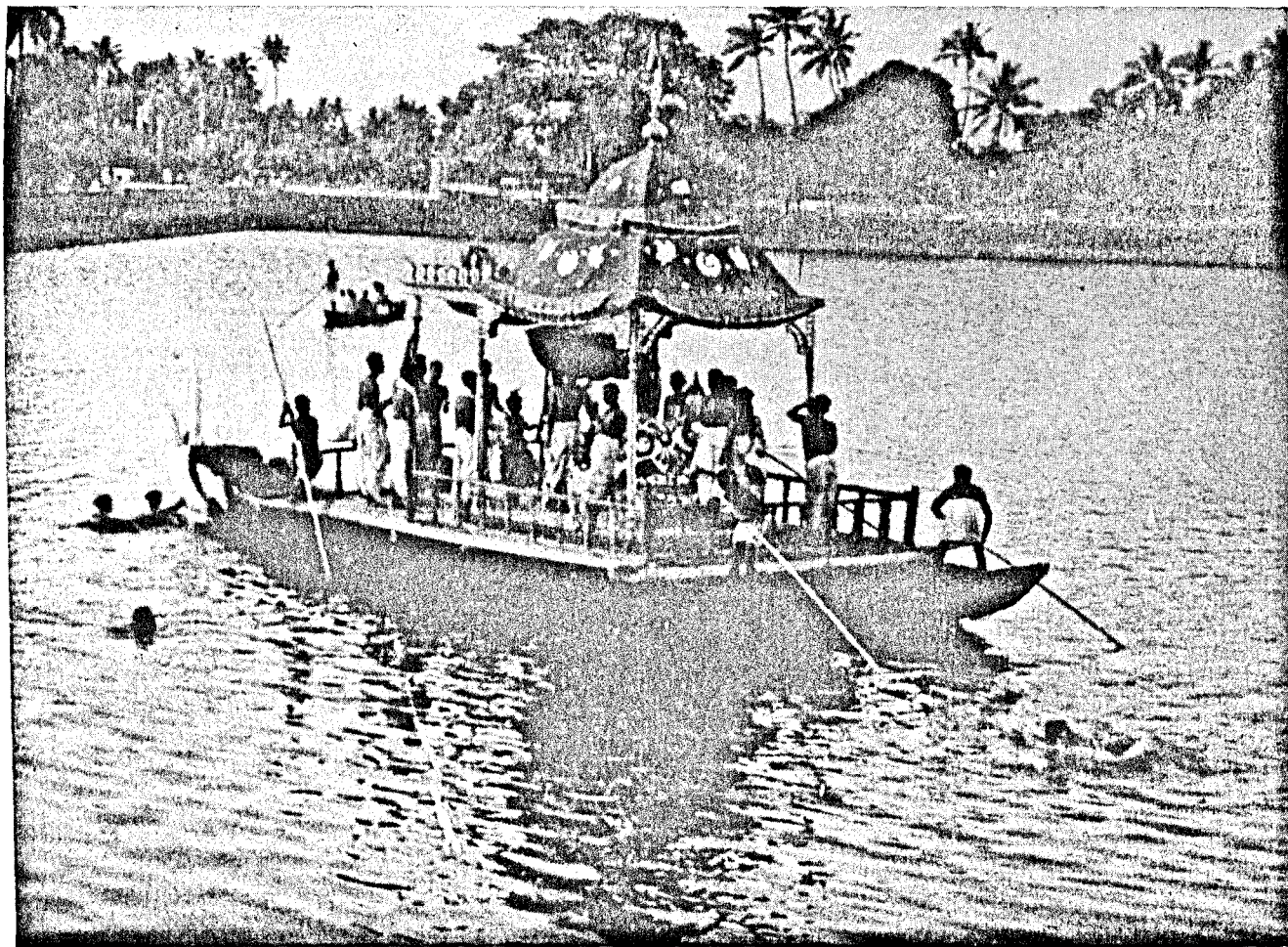
Festivals and Fairs

Two religious festivals of importance are linked with the traditional Gotipua dance which can be witnessed on these occasions in Orissa. One is the *Chandan Jatra* and the other, *Jhoolan Jatra*. Besides these two festivals they perform at several social gatherings. On the occasion of *Chandan Jatra* the Gotipuas give a performance on water, on the *chappo* — boat — at the time the Lord is taken out in a procession to *Chandan Pokhri*—the tank—for an immersion in sandal-paste after which commences a ceremonial boat ride. *Chandan Jatra* begins on the third day of *Vaisakh* on *Akshya Tritiya* (May) and continues for twenty-one days. Each night there are orders from the officiating priest of the temple for a particular Gotipua dancer to perform on the boat before the deity. The boat is a float constructed on two boats with a red canopy over the dance-area.

Make-up and Costumes

Abhinaya Chandrika, an important palm-leaf manuscript in Sanskrit text, but with an Oriya script commentary, written by Maheshwar Mahapatra, in the 17th Century, refers to the make-up and costumes required for Gotipua dancers. One of the manuscripts is in the possession of the present-day *guru* of Odissi dance, Kavichandra Shri Kalicharan Pattanaik, of Cuttack. The make-up indicated generally, is a buff colour base in powder-form which is applied on the face, collyrium is used to darken and elongate the eyes and eye-brows. A decorative pattern called *gorachana*, of a creeper like design, is painted on the forehead and encircles the eye-brows and runs down on to the cheeks. A beauty spot in the shape of a fly is placed on the chin. A *tika* or *tilak* mark on the forehead also adds beauty to the delicate face. Typical flower arrangement, specially devised for the hair-do, is called *pushpa-chuda* in the *Abhinaya Chandrika*. Two other types of flower arrangements are *ardha-baktaka* — semi-circular — and *kati-beni* — a single plait hanging down the back.

Photographs: P. 35 *Chandan Yatra* showing the ceremonial boat on which the dance is performed in front of the deity. Musicians' boat in background. P. 36. Palm-leaf manuscripts showing details of hair-styles, jewellery and acrobatic poses.





A large number of ornaments were previously used by Gotipuas, as can be gathered from the several names mentioned in *Abhinaya Chandrika*. But now-a-days the dancers use very few of them. *Chandra*, *alaka*, *ketaka*, are the names of some of those ornaments used for the head. For the ears, *kupa* are worn. Gotipuas also use several necklaces known by a variety of names such as *chapasari* and *padatilaka*. The arms are adorned with *tayita* and *karakanankan* for the wrists. Around the waist are tied *bengapatia* — the silver belts.

For the costume, traditionally, the *pattasari* made of indigenous silk of bright colours, generally in some shades of red and nine yards in length, was worn. The *kanchula* or blouse, was also of a bright colour on which were sewn imitation stones. A length of cloth draped the hips and was tied in front, embellished with frills and was known as *nivibandh* and the cord called *jobha*, with tassels at both ends, was tied like a waist-band. Of late the *jobha* is not in vogue. This costume was similar to that used by the *maharis-devdasis* — the women temple dancers, in the past, the difference being in the manner of wearing the sari. The *pattasari* was worn tightly and it had an equal length of material on both sides which was caught up and tied in a knot near the navel.

Many changes in costume have been brought about now. The blouse is sometimes of shining glossy satin or velvet material. Instead of the traditional *pattasari* a piece of bright coloured silk is used. There is however, some traditional order maintained. The Gotipua is still dressed as a girl. And finally the anklets are tied on by the *guru* and the dancer is then ready for performance.

He is brought in to the *akhada* and must first pay his obeisance to the Lord, after which he touches the feet of the *guru*. When the Deity is brought in a palanquin in procession to the *Chandan Pokhri*, the dancer

Photographs: P. 37. Gotipua dancer performing in temple courtyard during the Chandan Yatra Festival. P 38. Left: Gotipua showing abhinaya during an Akhada ghar performance. Right: Abhinaya interpreting Chandan Yatra song; note ornaments.

is allowed to enter the boat and, under the light of torches fixed in two stands in the boat, he dances before the sacred image. The *guru* plays the *pakhawaj* and a singer accompanies the dancer, these musicians occupying other boats. The theme is either from the *Puranas* or from *Gita Govinda*. Often during the *abalaya* or *abhinaya* — expressional dance — the dancer himself sings as he dances. The dancing continues till the boat reaches the bank once again after the ceremonial boat-ride round the tank.

Often Gotipuas perform in the court-yards of certain temples. For their services they receive some *dakshina* or offering. During *Jhoolan Yatra* for instance, Gotipuas dance at the *mukti mandap* or *jhoola mandap*.

Past Patronage

At first Gotipuas received patronage from the *akhada ghars* and the religious *maths*. Certain Zamindar families also maintained Gotipua parties for the entertainment of guests. The *akhadas* were established in several districts of Puri and Ganjam. It was in these districts that the *akhadas* flourished and patronage from local Zamindars was forthcoming.

After Ramachandra Deva's rule, the next 300 years in Orissa was a period of turmoil for the State. Having lost its independence it was ruled in succession by Pathans, Moghuls, Marathas and the British. These turbulent changes affected the religious, social and cultural life of the people. During the last century several other influences corrupted the dance of the Gotipuas, in particular the *Sakhi Nach* of the southern districts of Orissa. This dance belonged to the neighbouring Telugu regions. It was a voluptuous and sensuous dance of the *devdasis* and was imitated by the boys who performed the *Sakhi Nach*, which in turn influenced the Gotipua's dance, which lost much of its intrinsic beauty. To compete with touring *Jatra* theatrical companies and to please their patrons, an increasing vulgarity crept into the art of the Gotipuas. The latest danger of corruption is from the cinema and often the original Gotipua dance is completely disguised under a hotchpotch of so-called "film" dancing.

What we see today is unfortunately, a form of dance that has come to us in a degenerate state. Indeed it is a poor imitation of Odissi dance.

Luckily however, the present *gurus* of Odissi dance were Gotipuas trained during a period before decay had set in. Their efforts to save the dance, to reshape it and give it a new lease of life are very welcome. They are the torch-bearers of an unbroken tradition handed down in the traditional *guru-shishya parampara*. Foremost amongst them are the pupils of the late Guru Mohan Mahapatra — Shri Pankajcharan Das, Shri Debu Prasad Das and Shri Kelucharan Mahapatra, winner of the Sangeet Natak Akademi Award for Odissi Dance.

Text of Gotipua Songs

Chandan Yatra

*Shyama sundara sindhoo manthi
payilaki sambhara*

*Nohile Koobera Devabara-soonashira
hoyipare dootara.*

*Mo mana heuchi Narendra sara ye
sara heba kshira-sagara*

*Capa chalc bale pakai Mandara
manthilaki nandakishora.*

*Koustoobha mani ramanimaniki
apane kala angikara,*

*Banamali bole nilakandarare
hari karibeki bihara.*

O Shyam, the essence of Beauty eternal,
what treasures didst thou churn out of the ocean
that the God of Wealth and the King of all
the Gods, crowned in gold, do carry
a bit of thy wealth as messengers for ages.
Like Narendra to me is now
that vasty ocean of sweetest milk,

the boat is Mandara mountain that churns
 supreme ecstasy from earthly waters.
 Thou didst accept the Koustoobha
 and didst embrace the acme
 of women — it all happens in me once again—
 and I, Banamali the humble poet, wait
 when in the blue cave of my heart
 Thou shalt tread, oh god of gods.

Jhoolan Yatra

*Jhooluchanti nikoonja kanane go Sajani, Radhamohana.
 Cahinle mohooci mana
 Nohooci netra patana
 Ki Jatane khanjichi bimana go.
 Bedhina coukati Jane Jhoolauchanti khati camara
 Pankha alata ke dharanti pratihari samoocha
 Ghenina biharanti khatichanti taroolatamane, Sajani.
 Ghoti ghana ghana prabha
 Cancala Yamini abha
 Jhara Jhara barashe Jivana
 Nila gagane cahin keki nrtyakarayi
 Sari, sooka, pika hi mangala geeta gayi
 Poorita ye unmada garjana.*

Behold; the enchanter of Radha's heart swings in the bower!
 Bewitched are the eyelids and mind
 to see Him swing in celestial rhythm.
 How elegant is the ornate swing
 surrounded by nature herself!
 The creatures gives it a swing,
 Flowers keeps on fanning it,
 Cloud spreads its canopy
 and Lightening offers its eager flames;
 Showers come down on the
 deeper sky of His body,
 inspiring the peahen to dance with joy,

INTERVIEW

JERZY GROTOWSKI—EUGENIO BARBA

Translated from the French by Saroj Bhutani

Eugenio Barba: The name itself of your “Theatre-Laboratory” brings to mind the idea of scientific research. Are you of the opinion that the association of ideas thus established, is justified?

Jerzy Grotowski: The term research should not lead one to think of scientific research. Nothing could be further from our pre-occupations than science “*stricto sensu*”, this being so not only because of our lack of qualification in this field but even more so because of our lack of interest in this sort of work. The term research implies that we peer into our profession to take a close look at it, as the sculptor of the Middle Ages did to the piece of wood from which he wished to carve out a form already existing within it; it implies that we are not working like the scientist or the artist but like the cobbler who searches in the shoe for the right spot into which he can hammer a nail. The second meaning of this term is, in appearance, somewhat irrational since it contains the idea of penetration into our own nature as a human being. Lastly, in this age in which all languages are mixed together as in the Tower of Babel, in which all aesthetic styles are fused into each other, the theatre is in danger of dying out, for its domain has been invaded by cinema and television. This leads us on to ask ourselves what is theatre,

in what manner is it differentiated from other forms and in what manner is it irreplaceable.

E. B.: Has your search led to a definition?

J. G.: What does the word theatre mean? That is a question that we find ourselves confronted with often, and to which the most diverse of answers have been given.

Theatre according to professors :

For professors, the theatre is a place meant for a professional, from where this latter can spout out a written text, a place which gives him the opportunity to make a certain sum of gestures and to put into effect certain situations which help towards a better understanding of this text. Understood thus, the theatre is the utilitarian aspect of dramatic literature. The intellectual theatre is only a variation of this concept. Its disciples consider it only as a sort of platform for polemics. Here again, the text is the most important element and the theatre is there simply to give an exaggerated importance to certain intellectual theses, through an organised confrontation and struggle. It is a resurgence of the mediaeval art of elocution contests.

Theatre according to the spectator:

For the average spectator the theatre is above all a place for amusement. If the spectator goes there in the expectation of being face to face with a lighter among the Muses, the text, so to say, does not interest him in the least. What attracts him is what one would consider as the gag, the comic situation, and if occasion arises, the play on words, which would however constitute a return to the text. His greatest attention is concentrated on the actor as the subject of his attraction. A young lady sufficiently undressed is for the spectator of a certain age, an attraction by itself, at which he will express a cultural appreciation but which, in reality, satisfies certain deficiencies in his natural instincts. Or more simply, he desires only to relax, to distract himself as one would say, and we find then that amusement, humour, and humoristic values take, in this case, the upper hand over the literary value of the text. The spectator with cultural aspirations, likes, from time to time, to witness the dramatic rendering of a play from the international repertory. This

might even be a tragic play on condition that it contains an element of melodrama. Thus what the spectator expects is not homogenous. On the one hand it is necessary for him that he show himself as being a part of high society, which place is assured to him through the means of great art; on the other hand, he must have an outlet for a certain number of emotions which permit him some satisfaction. If the spectator feels pity for poor Antigone and distaste for the wicked Creon, even though he does not participate in the sacrifice of the heroine, he does not any the less feel himself as being her equal. For him it is a question of displaying noble sentiments. The didactic virtue of this kind of emotion is doubtful. The audience, consisting of a host of Creons, feels itself in unison with Antigone in the course of the performance, which does not in any way prevent it from acting like Creon immediately on returning to its normal occupations. It should be noted that the plays in which an unhappy childhood are evoked, are among the most successful. The fact of observing on the stage a poor tortured child, permits one to make common cause with the poor victim. Thus is it that one acquires the certainty of having raised oneself to a high moral level.

Theatre according to the actor:

For theatre people themselves, the concept of theatre is generally not crystallised. For the average actor the theatre is above all himself. But not what he is capable of doing through his profession: the theatre is himself, as a private organism. This attitude engenders the impudence and the self-satisfaction with which the actor presents to the spectator certain actions necessitating little knowledge, commonplace and ordinary actions such as walking, getting up, sitting down, lighting a cigarette, putting his hands in his pockets or performing gestures of everyday life, such as greeting or saying good-bye, and which, according to the actor, have nothing to reveal, but are sufficient unto themselves, for yet again it is he, the actor "X" who is the theatre. If the actor happens to possess a certain charm which captivates the spectators, they strengthen him in his beliefs. It is under such circumstances that the most primitive of acts such as that of accentuating one's entry on to the stage by accompanying it with the act of spitting and then wiping the spit with the tip of the shoe, is greeted by an ovation because it happens to be an act performed by a darling of the public.

Theatre according to the designer:

For the designer, the theatre is above all a plastic art, and this has positive consequences. The designers place themselves frequently on the side of the literary theatre. They say that *scenic design*, just like the actor, must be put to the service of the play. This profession of faith does not betray a desire to serve literature but the existence of a complex in relation to the producer. They prefer to be at the service of the author because he is further away from them and imposes less limits on them. In practice, the most remarkable of designers will confront the text with a plastic vision which goes beyond the imagination of the author and often exposes him. It is not by chance perhaps that designers have become in our country something like the pioneers of the theatre. They took advantage of the numerous opportunities opened up by the spirit of offence assumed by the plastic arts of the 20th century, which moved neither the authors nor the producers. Does that not constitute a danger? The critics who accuse the designers of invading the stage present in their justification many arguments that are objectively valid, but their approach to the problem is bad. It is as if they were upbraiding a carriage for not advancing at the speed of a snail. A designer's vision is creative, it is not stereotyped, and even if it were so, it loses its redundant nature by way of an immense amplification. This is what disturbs them and not the fact that the vision of the designer dominates over those of the actor and of the producer. But willy nilly, the theatre of the designer is being transformed into a series of living pictures. It is becoming a sort of "camera obscura" of captivating magic lanterns. But is it not thus ceasing to be theatre?

Theatre according to the producer:

What then is theatre to the producer? Producers are theatre people who take up this profession following lack of success in other fields. The man who once dreamt of writing plays, willingly becomes a producer; the unsuccessful actor, the actor who has played juvenile leading roles and who is nearing the critical age, becomes a producer; theatre critics who have felt intensely a complex of weakness in the face of an art which they are only capable of describing in writing, also enter equally willingly into the career of producer. Professors of literature whose scientific work bores them and who show an excess of sensitivity,

think of themselves as being competent to be producers. They are familiar with drama, and to their mind, what is theatre if not the manifestation of drama? It is because of all this that the opinions of producers about theatre are among the most diverse possible, not on account of their speculations relating to the philosophy of this art, but because of the psychological motivations which animate them. Their work is a compensation of diverse phenomena; for example, men whose political instincts may have remained unsatisfied become producers and indulge in the pleasure which this form of power gives them. This leads to formulas of interpretation more than often perverse, and it is thus that producers motivated by this extreme instinct of domination bring on the stage performances which constitute a real polemic with power; it is often from this that originate the performances of "revolt".

The peace of the brave in the field of literature

Naturally, the producer would like to be a creator, and that is why, more or less openly, he declares himself to be a partisan of the autonomous theatre, independent of literature, considering this latter as being merely a sort of pretext. But on the other hand, rare are those who are capable of creative work of this kind, and many are officially content either with the formula of the literary and intellectual theatre — the term "intellectual" is important here; it gives the impression of a man of the modern age — or to abide, in essence, by the formula of Wagner who said that the theatre should be the synthesis of all arts: an extraordinarily useful formula. It allows one to respect the text — a basic element not to be tampered with — and in addition, it does not lead to any conflict with literary and philosophical circles, for, it should incidentally be specified, that every writer, even he who can be called a writer only out of infinite courtesy, believes himself obliged to defend the rights and the honour of Mickiewicz, of Shakespeare, etc. . . simply because he thinks of himself as their fellow-writer. It is thus that Wagner's theory: "the theatre is total art" allows the prevalence of the peace of the brave on the literary field. This formula permits of the exploitation of scenic design, its plastic elements being integrated into the performance, and the attribution to this of all success. The same applies to music, be it original or pieced together from compositions of others. Add to that, more or less at random, the names of one or

several actors, and lo and behold, on the basis of these elements, each coordinated to the other, is born a performance which satisfies the ambitions of the producer: the person who keeps himself at the summit of all the arts and who, in practice, absorbs all these arts without being obliged to undertake a creative task which others accomplish for him, if at all there does happen to exist, in this arrangement of things, some one or the other who actually creates. Thus then, the quantity of definitions of the theatre is practically unlimited. To escape from this vicious circle, it would undoubtedly be better to adopt the method not of adding, but of eliminating, that is to say, of asking oneself what it is "without which" the theatre cannot exist. Let us see: Can the theatre exist without costumes and without stage-settings? It can. Can the theatre exist without music accompanying the development of the theme? Yes. Can it exist without the help of light effects? Certainly. Without a text? The history of theatre confirms that it can. The text made its appearance in the development of the dramatic art only at its later stages. If we put on to the stage a few people with a scenario which they have knit together in common, and who improvise their actions, as used to be done in the Comedia dell'Arte, the performance which will result from this will still merit being called theatre. And that is so even if the words are not articulated but muttered. Can the theatre exist without the actor? I know of no example of this. The case of the puppet theatre can be mentioned, but here again, we do find, in another way, an actor. Can the theatre exist without spectators? There must be at least one for the existence of a performance. Thus, there remain the actor and the spectator.

The actor the spectator

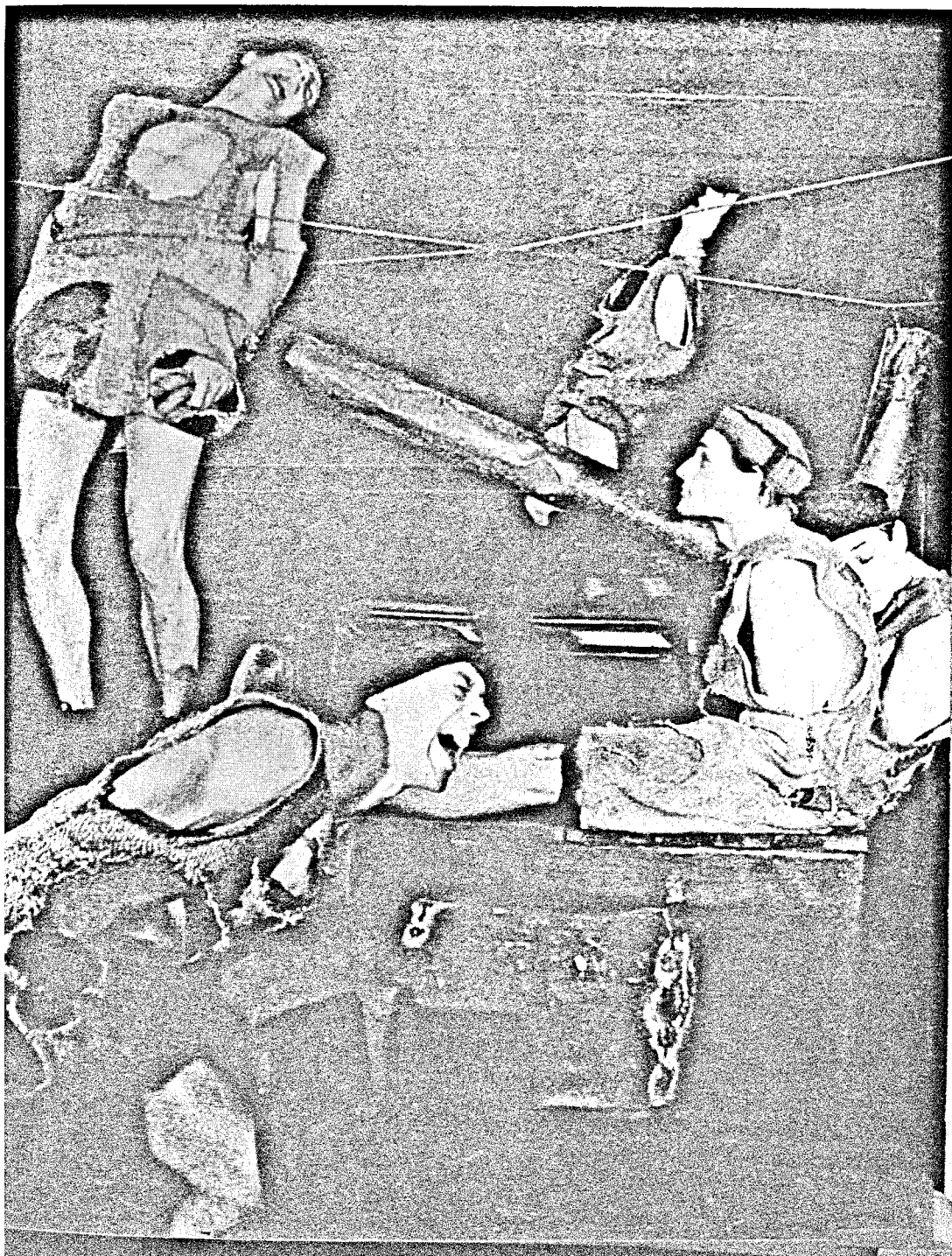
We can thus define the theatre as that which happens between the spectator and the actor. All the rest is supplementary, necessary perhaps, but supplementary. It is not a matter of chance that our work evolves from a theatre of rich means, in which are deployed the plastic arts, lighting, music, towards a theatre of poor means, an ascetic theatre that we are putting into practice since several years and within which remain in fact only the actor and the spectator, and in which all the other visual elements, for example the plastic elements are brought out by means of the body of the actor, the acoustics and the musical

effects by his voice etc. . . That is why we consider the text as a sort of spring board, and not as a model, not because we despise literature but because it is not in literature that is to be found the creative part of the theatre, even if great literary works can be an invaluable stimulus for this creation. If there remain in our theatre only the actor and the spectator, this imposes on both of them particularly exacting demands. And if we cannot train the spectator, at least in a systematic manner, we can certainly train the actor.

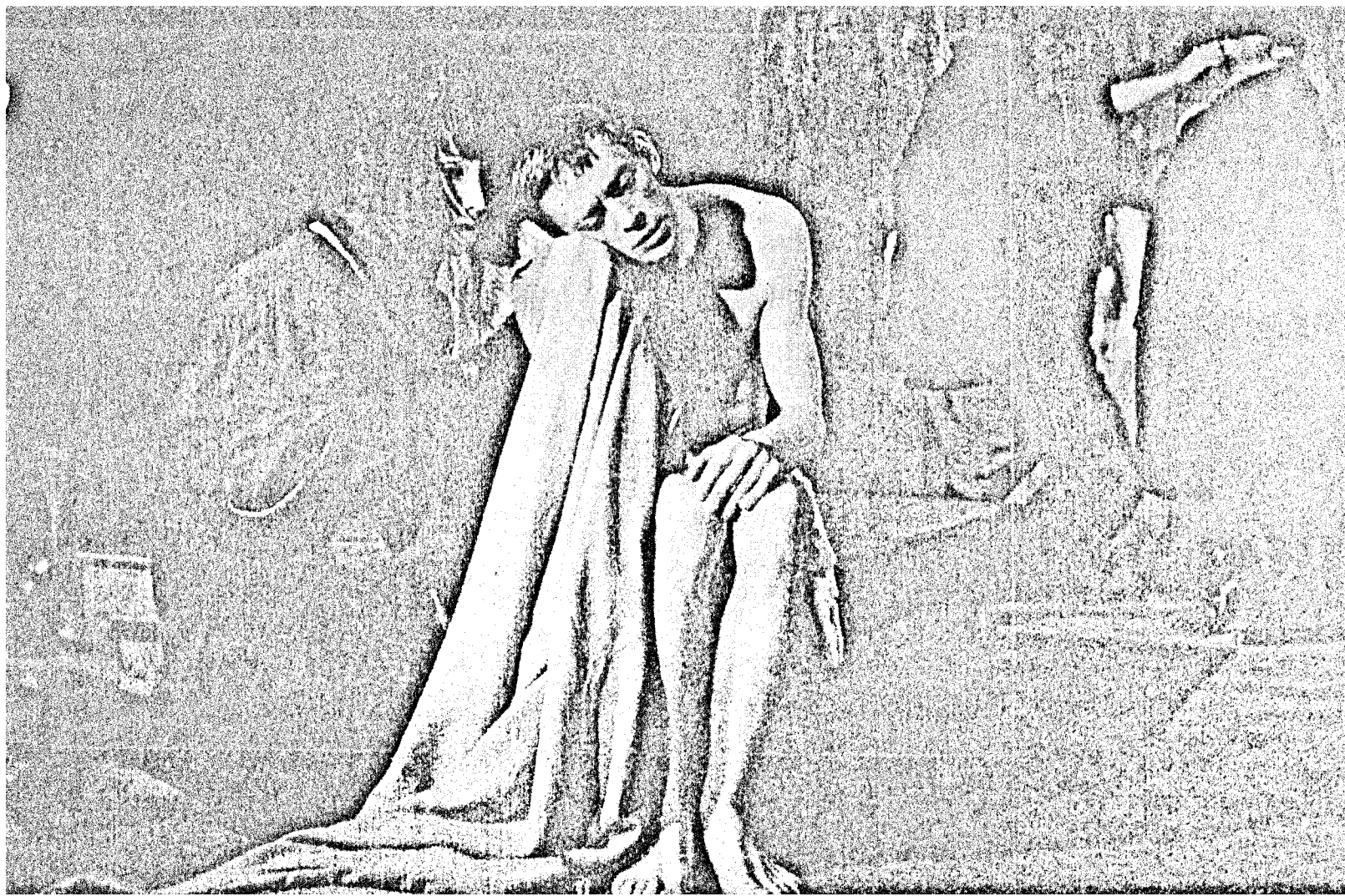
E. B.: What role do you attribute to the actor?

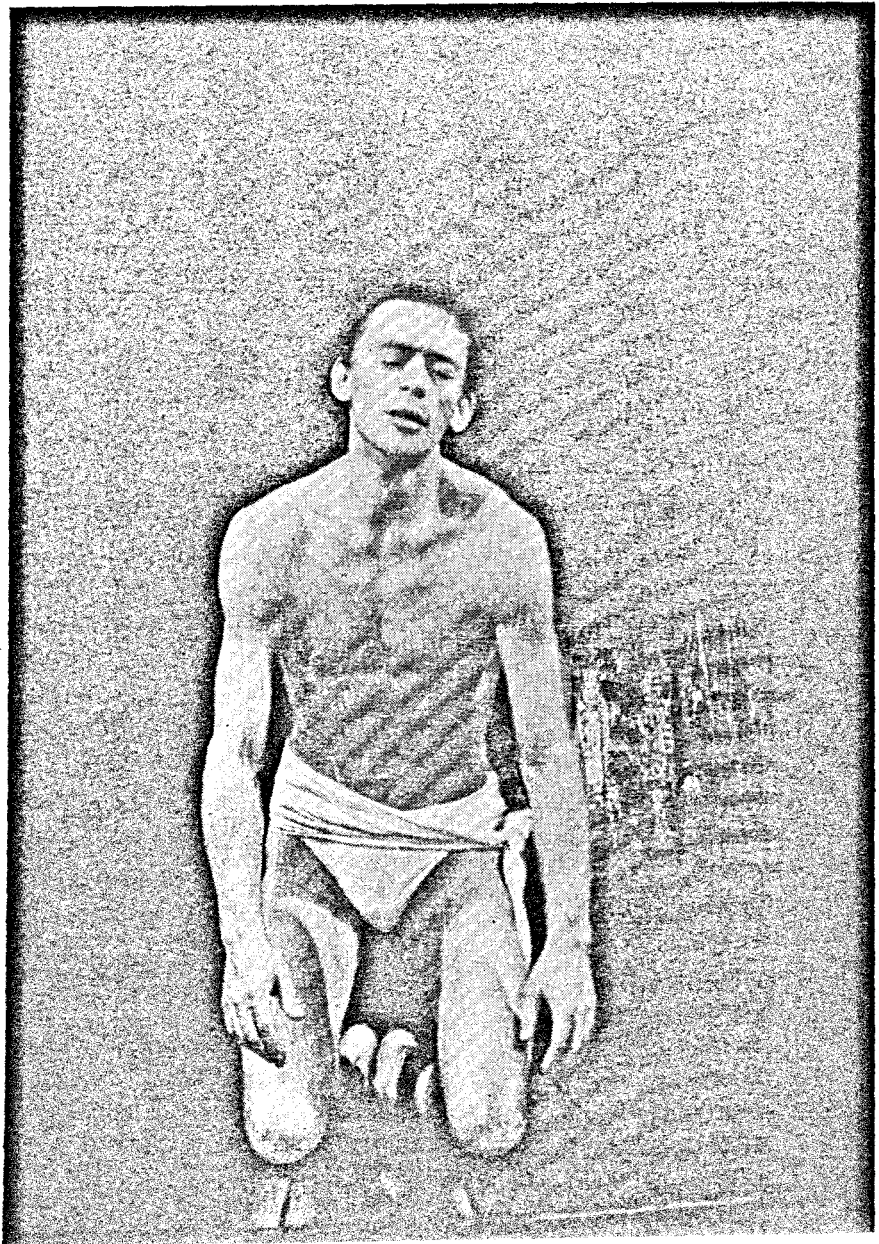
J. G.: The actor is a man who works publicly with his body, who gives it to the public. But if his body is satisfied with demonstrating only what it is, which is within the reach of any average person, if it does not become an instrument which obeys in order to accomplish a truly spiritual act, if it is exploited for money, and what is known as success in relationship to the public, then the art of the actor becomes infinitely close to prostitution. And it is not a matter of chance if, over the centuries, the theatre has been a symbol of prostitution, in one sense or another of this term. The terms actress and courtesan were at one time synonymous; today they are separated by a more precise frontier, and this is so not because of any change in the circles of the actor, but because of changes in the pattern of social life, for today it is the difference between the good woman and the courtesan, which has faded away. And what is more, what strikes one when one considers the actors profession, such as it is practised commonly, is its poverty, this bargaining away of an organism, tormented by its protectors: director, producer, etc. . . which, in turn, promotes an atmosphere of intrigue, of revolt etc. . . Just as according to theologians, only a great sinner can become a saint (take the Apocalypse: "because you are luke-warm, neither freezing nor burning, I will vomit you from my mouth"), in the same

Photographs: Page 51. "Acropolis" by Wyspianski, Paris and Helene, showing the charms of sensual love, but here Helene is a man; their lyricism is mocked by the jeers of other prisoners. P. 52 Zygmunt Molik as Jacob the Harpist, guide of the agonised tribe (note face mask without make-up). 2. Wedding of Jacob and Rachel, from "Acropolis; prisoners form the procession. Leading them Jacob carries an iron piece to replace his loved one.









way, it is the misery precisely of the actors profession which can be transformed into a sort of saintliness, and there are no lack of examples of this in the history of the theatre.

Naturally I am talking of saintliness as a non-believer, I am speaking of a "secular saintliness". If the actor accomplishes publicly a provocation of other men by means of a provocation of himself; if, through an excess, through a desecration, an inadmissible sacrilege, he searches into his self by over-stepping the boundaries of his ordinary personality of everyday life, he encourages the spectator also to undertake such a search. If he does not make an exhibition of his body, but if he destroys it, burns it, liberates it from all resistance to whatever psychic propulsion there may be, then he does not sell his organism but makes an offering of it, he repeats the gesture of redemption, he is then close to saintliness. If this manner of acting is not to remain something ephemeral, if it is not to be the chance explosion of an out-of-the-ordinary personality, a phenomenon not to be predicted in place and time, if a theatrical company whose daily bread were to depend precisely on this type of actor, has to exist, it is necessary to codify special methods of research and training. I would like to begin by talking here of the most technical and the most perceptible part of our work.

Saint-actor — courtesan-actor

E. B.: How do you conceive of the work of the saint-actor?

J. G.: A certain myth entails that the actor, enriched by a certain sum of experiences, acquires what is known as a technical arsenal, that is to say a sum of procedures, of devices, of strings from among which, by choosing for each role, a certain number of combinations, he can obtain a high degree of expressiveness, in order to please the public. I will not linger on the fact that this arsenal of technical means may constitute no more than a sum of clichés. A performance of this nature is inseparable from the concept of prostitution. The difference between the technique of the courtesan-actor and that of the saint-actor (to continue this extreme opposition) is practically that which separates the skill

Photographs: P. 53. "The Constant Prince" by Calderon; the persecutors confess to their victims. P. 54. Ryszard Gieslak as Prince Constant, in the Soliloquy towards Abundance.

of the courtesan, from the gesture of giving of oneself and of accepting, which is born out of true love, that is to say the offering of oneself. In the second case, what matters is to know how to eliminate what is importunate, to overstep every imaginable frontier.

In the first case it is a question of increasing one's skill, in the second of breaking down resistance and barriers. In the first case it is a question of the existence of the body, in the second, in a way, of its non-existence. The technique of the saint-actor will be an inductive technique, a technique of elimination, while that of the courtesan-actor will be a deductive technique, of additions of talent. This is the general formula to which are related their respective acts. The actor who accomplishes an act of autopenetration, of renunciation, of gifting away of his most intimate self, must have in his power the possibility of manifesting psychic impulses so subtle that they hardly appear to have had the time to emerge, and transport them into the sphere of the reality of sound and gesture, of impulses which, in our psyche, hesitate at the frontiers between the real and the dream world. In a word, he must be able to build up his own psychoanalytical language of sound and gesture, in the same way as a great poet gives reality to his own psychoanalytic language of the word. If, in addition, we take into consideration, for example, the problem of sound, the plasticity of the respiratory and vocal apparatus of the actor should be incomparably more developed than that of the ordinary man. What is more, this respiratory and vocal apparatus should be capable of bringing out each sound reflex so rapidly, that thought, which might hinder any spontaneity, has no time to interfere. In addition, the actor must decipher all those problems of his organism, which are accessible to him. He must know which are the means of directing the air which carries sound into a particular part of his body, which produce sonorities appearing to have been amplified by different types of resonators. An average artist is familiar only with elocution under its "mask", that is to say with the use of the resonator of the skull which strengthens the sonority of the voice, gives it a more noble shape, a sound more agreeable to the ear of the spectator. Sometimes, he guesses that in a similar manner, though for other purposes, a "pectoral" resonator can be made use of. But the actor who searches in a precise manner the possibilities offered

by his organism discovers that, truth to say, the quantity of resonators in it is unlimited. At least he can force into work, over and above these two resonators, other resonators (occipital, nasal, dental, larungal, ventral, lumbar, the total resonator which would encompass the totality of the body) and many others, some of which are still unknown to us. This actor will discover that it does not suffice to practise on the stage an abdominal respiration, for the multiple stages of psychic action necessitate diverse types of breathing, if it is desired not to have trouble with one's breathing and end up by meeting with a resistance from the body. He discovers that the articulation that he learnt at the School of Dramatics is too often accompanied by an obstruction of the larynx and that it is necessary for him to acquire the power of opening voluntarily his larynx, and to control its opening and closing from the exterior etc. . . If he does not solve these problems, the process of autopenetration fails, as he will come up against difficulties that will capture his attention. If the actor feels that he has a body, he cannot accomplish the act of autopenetration and of relinquishment. The body must free itself of all resistance. It does not suffice that, for example, in the respiratory and vocal field, the actor acquire the power of putting into action the afore-mentioned resonators, open the larynx and choose a type of larynx etc. . . He must teach himself to put all that to work unconsciously, at the culminating point of the problem of acting, which in turn necessitates yet another series of exercises. He must learn not to think, during the performance of his role, of adding technical elements (resonators etc. . .) but of eliminating obstacles, when these are perceptible (for example a resistance to sonority or to the range of the voice). This difference is not distinctly perceptible, yet it is on this that a success depends. This indicates that the actor will never acquire a trained technique, and that at each stage of searching into himself, of provocation due to excess, at each breaking down of his hidden barriers, there will appear new technical limits at a higher stage and that it will be necessary to learn to overcome them, starting once again from the basic exercises. The same goes for movement, the plasticity of the body, the gesture, the construction of a facial mask, with each detail of the "corporality" of the actor. It is not a question of acting oneself under given circumstances (what is called living a personality) no more than to propose a character keeping him at a so-called distance, in an epic manner, beginning with an analysis carried out

coldly, from the outside. It is a question of using a character as a spring-board, an instrument for scrutinising what is to be found behind our mask of everyday life, what constitutes the most secret means of our personality, in order to make an offering of it, to give it up. That constitutes an excess not only for the actor, but also for the spectator, for the latter, consciously or unconsciously, understands that such an act is for him an invitation to act in a similar manner, which leads frequently to opposition or to indignation, to the extent to the which our daily efforts tend ordinarily to dissimulate the truth about our soul not only from the eyes of others but also from our own. We flee the truth about ourselves and, lo and behold, it is suggested to us that we stop and look. We fear that we may be transformed into a statue of salt as was Lot's wife, if we turn around and look. I do not wish to cite examples here as that would take up too much space. Specific ones can be evolved at the time of particular performances.

Passive availability for an active theme

The accomplishment of the act in question, that of relinquishment, necessitates the mobilisation of all the physical and spiritual forces of the actor who should be in a state of passive availability. Passive availability for the purpose of bringing into reality an active theme. It is necessary to have recourse here to metaphorical language to say that what is decisive in all this, is humility, the spiritual inclination not simply to do something but to abstain from not doing this thing. Otherwise, excess becomes an impudence and no longer an offering. This means that the actor must act in a state of trance. Trance, that is to say, the power of concentration in a theatrical manner, such as I understand it, can be acquired with a minimum of goodwill. If I were to express everything in one phrase, I would say that it resides in the gift of oneself. It is necessary to give of oneself, completely denuded, in ones greatest intimacy, with confidence, as one gives of oneself in love. It is here that everything is concentrated: autopenetration, trance, excess, the discipline of form itself — all that is brought about if there has really taken place the sweet and warm gift of oneself. Just as in humility without restraint. This act culminates in a crescendo. And it gives rise to peace. All these exercises without exception, forming the chapters telling of the training of the actor, should not be exercises of skill, but

form a sort of system of allusions leading to the elusive and inexpressible process of gifting of oneself.

All this sounds a little strange and it is difficult to deny that we are dealing here with a sort of knowledge of the healer. If we are bent on scientific formulas, we can say that these are points of application of suggestion, having as its aim an ideoplastic performance. Personally, however, I must state that we feel not the slightest hesitation in making use of these formulas devised by "bone-setters". In reality, what seems magical, abnormal, is precisely what acts on the imagination of the actor and of the producer. I am of the opinion that it is necessary to draw up an entire special anatomy of the actor by looking for those parts of his body which the actor sometimes feels as being his sources of richness. It is in this way often that function the lumbar region, the lower abdomen, the solar plexus.

An essential factor of this process consists in the setting out of the structure of form, of artificiality. The actor accomplishing an act of relinquishment, throws himself as if into a journey which he narrates by means of his sound and gesture reflexes, addressing a sort of invitation to the spectator. The signs used by the actor must be articulated. The expressibility is always related to certain forms of controversy, of contradiction. The autopenetration which is not accompanied by discipline, does not become a release but takes on the form of biological chaos.

Discipline and spontaneity

E. B.: How do you reconcile spontaneity with a deliberate moulding into shape?

J. G.: The moulding of artificiality is a matter of ideograms (gestures, sounds), the appeal to associations in the psyche of the spectator. It is a task which evokes that of the sculptor in relation to a block of stone, it is the conscious utilisation of a hammer and a chisel. It consists, for example, in analysing the reflex of the hand found in a psychic process, then its successive evolution towards the shoulder, the elbow, the wrist, the fingers, and to determine the manner in which each of these elements united, can be articulated in one sign, in one ideogram which would

either communicate immediately the secret motives of the actor or provoke a sort of dialogue with them.

This process of formulation of a structure depends on a conscious search into the interior of the organism, of forms whose design is felt by us, but whose reality yet remains elusive to us. A wager is laid that we will find the ready form within the organism. Here we consider the performance of the actor being, as art, nearer to sculpture than to painting. Painting consists in adding colours, while the sculptor removes that which hides the form, so to say, already lying within the block in which we desire not to install it, but to delve it out.

All this work of formulation of a structure and of a form necessitates again an entire series of supplementary exercises, the invention of small themes for each organ of the body. At any rate, the decisive principle remains the following: the more we penetrate into that which is hidden within us, the relinquishment, the more has the exterior discipline to be tightened, which is the form, the artificiality, the ideogram, the sign; it is in this form that resides the principle of expressibility. That is enough about the postulates concerning the relationship with the actor.

To be concluded

Jerzy Grotowski, eminent Theatre producer and Director of the Theatre Laboratories Institute De Recherches Sur Le Jeu De L' Ateur, Wroclaw, Poland, has done outstanding work in experimental theatre. His theory of "The Theatre of Poverty" has been the subject of debate and controversy in international theatre circles throughout Europe and the United States. Of interest is his attraction to Kathakali as a form of theatrical arts.

Eugenio Barba well-known critic and writer on theatre arts, contributes to leading European and American Theatre Journals; has written on Kathakali in "T.D.R." Vol. X: No. 4 (formerly "Tulane Drama Review"). He now directs an Institute of acting research in Denmark.

NEW YORK THEATRE AND A NEW YORK PLAYWRIGHT

Bernard F. Dukore

One is tempted to state that if our actors were as disciplined and well trained as the dancers of New York City Center's Joffrey Ballet, and if our playwrights were as imaginative and as capable executants as Robert Joffrey and the other choreographers whose works comprise his company's repertoire, then truly would we have a distinguished American theatre. However, many of our actors are as able in their craft as the ballet dancers are in theirs, many of our playwrights as admirable as Joffrey and his associate choreographers. Why, then, do we not have a distinguished American theatre? Partly because our theatrical artists do not always function at the top level of their skills, partly because our best actors, directors, and playwrights do not always work together. Although an account of the current New York theatre scene is almost inevitably an account of disappointment, the reverse side of this disappointment may be hope and expectation. If optimism finally emerges from this account, it will arise from two factors. First, disappointment is not equivalent to despair. Second, the achievements of American playwrights, directors, and actors are not only sufficiently substantial to have fostered the expectations which led to the disappointments, but still create hope for the future. If my account begins with a gloomy assessment, this is partly because it would be dishonest to shut one's eyes to the mediocrity that pervades most American theatre, and partly because to begin with an account of the better aspects of our theatre would mean to ~~end with an account of the worse~~. I prefer to end on what I think is justified optimism.

On Broadway, the musicals, machine-made comedies, and sentimental dramas hold forth. *How Now, Dow Jones*, a musical about American business reminiscent of a slightly less dreary musical called *How to Succeed in Business Without Really Trying*, enters the lists, competing with two holdovers from 1965, *Fiddler on the Roof*, based on Sholem Aleichem's stories of Jewish ghetto life in Czarist Russia, and *Man of La Mancha*, based on Cervantes' *Don Quixote*. The sources for the older works hardly matter, for the music of Wall Street, Anatevka, and the Spanish countryside are, on Broadway, indistinguishable, reflecting less the milieu of the plays than the milieu of Broadway. With its musicals, every season has its machine-made comedies and its shallow, sentimental commodities. Sometimes native products, sometimes imports, they are in quality and insight little different. Neil Simon's *Plaza Suite*, Terence Frisby's *There's a Girl in My Soup*, Jay Allen's *The Prime of Miss Jean Brodie*, adapted from Muriel Spark's novel, are all undistinctive, all shallow, all very much like the fashionable plays which they superseded and others which will supersede them next season. It hardly seems to matter that the first playwright is American, the last two British. Inconsequence knows no national boundaries.

These examples of standard fare, however, suggest the apparent dominance of English drama on Broadway. Of this season's new plays from England, the most important is unquestionably Harold Pinter's *The Birthday Party*, written in 1958, a comedy of chilling fascination in which two strange men visit a lodging house in a seaside town in order to terrorise a young lodger, who appears not to have set foot outside the house since he arrived there some years before. Brutally interrogating him, coolly confronting him with unstated threats of physical violence, and breaking his thick glasses, the two visitors crush the young man's spirit, driving him to a breakdown following which he is unable to speak coherently, and take him away with them. "We are not free", said Antonin Artaud, prophet and forerunner of the Theatre of the Absurd, "And the sky can still fall on our heads. And the theatre has been created to teach us that first of all." Published twenty years before the composition of *The Birthday Party*, Artaud's statement, in *The Theatre and Its Double*, may be taken as the theme of Pinter's Absurdist play. In Pinter's Kafka-like world, nameless and unspecified terror enters from

the outside, contaminating a hitherto safe world — actually, a world only apparently safe — and confounding a defenceless creature huddled inside. These subjects, which are embedded in the action and may be inferred from the dialogue, are never clearly stated, much less argued about. Pinter's techniques — non sequitur, strong verbal rhythms, the repeated use of seemingly irrelevant clichés, and the like — become not an expression of these themes but the themes themselves. Pinter's form is his content, and this form-content is not tragic but comic. His people, tiny rather than heroic, aim to evade rather than confront. Preoccupied with the trivia of common, daily life, they express themselves in cliché-ridden speech which substitutes for thought. Their absurd concerns and absurd manner of expression symbolise the Absurdity of the human condition. Pinter is *sui generis*, and his plays are unique manifestations of the Theatre of the Absurd.

Unfortunately, few of Pinter's special qualities were evident in this production. Alan Schneider, who previously demonstrated acute sensitivity in his direction of other plays by Pinter, and his actors, equally expert on other occasions, overdid virtually everything, offering caricatures instead of nuances, punching and telegraphing their laughs (which therefore never came) instead of allowing the humor to rise from the characters behaving realistically in the situation. I can only guess the reason for this surprising failure. Their earlier productions of Pinter were presented off-Broadway — in smaller houses, for a younger and more sophisticated audience, and with less money at stake in the success of their venture. Here, in a Broadway house, before an affluent, middle-aged, and middle-class audience, with a great deal of money invested in the production, the exaggerated, "sure-fire" methods, inappropriate to the play, were used, with deplorable results.

To move from Pinter's *Birthday Party* to Tom Stoppard's *Rosencrantz and Guildenstern Are Dead* is to move from the important to the nugatory and, perhaps consequently, from Broadway failure to Broadway success. Stoppard's title indicates his use of *Hamlet* as a reference point. A few minutes after the curtain's rise is sufficient time to realise that he is using Samuel Beckett's *Waiting for Godot* as well. Stoppard's *Rosencrantz and Guildenstern* enact their own drama as, around it, *Hamlet* acts his, for cuttings from Shakespeare's play are pasted inside

Stoppard's scenes. "Sent for" by Claudius, Rosencrantz and Guildenstern arrive, attempt to question Hamlet, realize their inadequacies, are with Hamlet dispatched to England, and then dispatched in England. These secondary characters of Shakespeare's play are, as Stoppard portrays them, secondary characters in life, without individual identity, without meaningful existence, used by others for ends they cannot comprehend, filling the time with games and chatter until they go to a quietus made by others. Unlike Beckett's tramps, Stoppard's fraternity men from Wittenburg University discuss their lack of identity, the absurdity of human existence, and similar topics. Discussed rather than dramatised, Absurdity is presented in a harmless and conventional manner rather than in a direct assault. Stoppard's play is *about* Absurdity, whereas *Waiting for Godot* and *The Birthday Party* are themselves metaphors of the Absurd. Stoppard's play, which I should remark is extremely dull and without intellectual or verbal distinction, is nevertheless a commercial success. Why? Apart from capable direction by Derek Goldby, superb settings and lighting by Desmond Heely and Richard Pilbrow (respectively), and good acting by Brian Murray and John Wood in the title roles, the play seems to appeal on two related levels of middle-class culture. One is the delighted recognition of Stoppard's major frame of reference by people who read *Hamlet* years ago; the other is the sight of Gogo and Didi in tights, discussing and elucidating the human condition (which Beckett's Gogo and Didi never do) thereby purveying what might be called "Absurdism Without Tears".

To find vitality in the New York theatre one must leave the Broadway milieu. The most exciting production I have seen in New York this season (with the exception of the Joffrey Ballet, mentioned in the opening paragraph) took place in a small theatre in the heart of Greenwich Village. It was not an avant-garde, free-form experiment but Euripides' *Iphigenia in Aulis*. Directed by Michael Cacoyannis and starring Irene Papas as Clytemnestra — both known internationally for their work in such films as *Electra* and *Zorba the Greek*, both exiles from the Fascist regime in Greece — and featuring two remarkably powerful American actors, Mitchell Ryan as Agamemnon and Jenny Leigh as Iphigenia, Euripides' play acquired a shockingly contemporary relevance.

Virtually every line vibrated with irony as noble sentiments revealed themselves as cant, masking ignoble motives.

So far, we have been commenting on individual productions rather than theatre companies, of which New York has five, operating on and off Broadway.¹ Two companies may be said to function as part of the Broadway theatre, both in location and in spirit: the APA (Association of Producing Artists) and the inaccurately titled Repertory Theatre of Lincoln Center (which has a resident company, augmented by visiting stars, performing plays *seriatim*, for approximately five weeks each). In production, their differences are few. While the APA's presentations are fangless and superficial (last season they offered a *Right You Are* which lacked anguish and a *War and Peace* so proper that thoughts of slaughter and bloodshed never threatened to offend the sensibilities of the audience), the Lincoln Center's are uninspired and bloodless. This season's *Saint Joan* was performed by the latter company in an antiseptic setting that could serve as well, or as poorly, for several dozen other works. Playing for effect rather than for immediacy of situation, its lackluster actors were generally unable to deal successfully with Shaw's language and did not deeply probe the characters. Although Lincoln Center's productions are as meretricious as the APA's, their repertoire is considerably different. At Lincoln Center, *Saint Joan* (acknowledged by many — rightly, I believe — to be one of the great plays of the modern theatre) is unique. The remainder of the season's fare consists of machine-made melodrama (*The Little Foxes*), literate boulevard theatre (*Tiger at the Gates*), and sentimental piffle (*Cyrano de Bergerac*). The APA's repertoire, of which this season is fairly representative, consists of "standards" (*The Cherry Orchard*), the accepted avant-garde (*Exit the King*), and generally neglected American works (*The Show-off*). Although such a repertoire as the APA's is hardly adventurous, it is not only respectable but necessary to a vital theatre aware of its traditions. Does the difference between Lincoln Center and the APA consist of ostenta-

1. I have unfortunately been unable to see the new Negro Ensemble Company. Tickets for its first production, Peter Weiss's *Song of the Lusitanian Bogey*, were sold out shortly after the production was announced and its second production, an adaptation of Ray Lawler's *Summer of the Seventeenth Doll*, transplanted from Australia to Louisiana, opened just recently.

tious tastelessness *versus* prim respectability? If so, a choice between them is no choice at all. Happily, one can take one's trade elsewhere.

Joseph Papp, whose New York Shakespeare Festival has for the past dozen summers presented professional productions of Shakespeare's plays in Central Park, at no admission price, this year established winter quarters in "The Public Theatre", a few blocks east of Greenwich Village. Far from restricting his winter theatre to the classics, Papp produces wildly modern works (this first season began with *Hair*, "A Tribal Folk Rock Musical" about hippies and their elders) and when he produces a classic he consciously aims to renew the older work with modernist methods derived from productions of new plays. The Public Theatre's second production, *Hamlet as a Happening*, was a magnificently irreverent romp utilising Shakespeare's play not as a text to be read but as a basis for an independent creation. Symptomatic of Papp's irreverence toward the text were the names of Hamlet's Wittenberg friends, Rosencraft and Guildenstone — not from the text approved by scholars but from the disreputable quarto of 1603. While some members of the audience were shocked at the rape of Shakespeare's text, others leaned back and enjoyed the violations. Papp's deletions, displacements, and distortions included Hamlet sleeping in a coffin at the foot of Claudius' and Gertrude's bed; Ophelia as a mini-skirted, rock-singing ninny, understanding neither her boy friend nor daddy's intrigues; uniformed thugs wielding blackjacks in front of the prison-like walls of Claudius' police state; Russian roulette instead of a duel with rapiers; and such dialogue as:

Polonius: My honorable lord, I will most humbly take my leave of you.

Hamlet: You cannot, sir, take from me anything that I will more willingly part withal, except my wife, except my wife, except my —
(recognising his error)—*I mean: except my life, my life, my life.*

Asked what he is reading, Hamlet does not reply, "Words, words, words." Instead, he shows Polonius a copy of *Hamlet*. Such liberties with the text not only force us to view the play in a different perspective but, more important, project Hamlet as a self-conscious actor performing in a scenario whose inevitable end he not only foresees (since he has read *Hamlet*) but cannot evade. The style of this production brilliantly matches the directorial viewpoint, and the actors — notably Martin

Sheen as Hamlet — perform with such precision and freedom that watching them is an exhilarating experience.

Different from all of the theatres thus far mentioned is the American Place Theatre. With no social, political, or aesthetic axe to grind, the American Place aims, according to its programme note, at "providing a place, a staff, and a broad programme of practical work to American writers of consequence: our poets, novelists, and philosophers who wish to use the dramatic form, and to serious playwrights. The selection of writers is not confined to any group, style, or point of view. The choice is eclectic, the primary factor being: "is the voice worth hearing on the stage?" Now in its fourth season, the American Place has found a number of voices worth hearing, the most widely known of which is probably that of the poet Robert-Lowell, whose *The Old Glory* inaugurated the American Place's first season in the Autumn of 1964. While it must in all candour be admitted that they have provided a stage for several voices better left silent, their achievements more than justify their failures.

So far this season, the most significant new American play at the American Place, or for that matter anywhere else in New York, is *The Ceremony of Innocence*, the third play of a unique and extremely interesting American playwright, Ronald Ribman. Ribman, a native of New York who studied at Brooklyn College and later at the University of Pittsburgh, where he received a Ph.D. in English literature, is a poet whose three stage plays, all in prose, were all produced at the American Place Theatre: *Harry, Noon, and Night* (1965), *The Journey of the Fifth Horse* (1966), and *The Ceremony of Innocence* (1967). Because of the substantial merits of these plays, which are not generally known outside the United States, a discussion of all, not only his new play, seems appropriate.¹

Harry, Noon, and Night, set in Munich, Germany in 1955, focuses on Harry, an expatriate American from Ohio who is physically dislocated from his homeland, and Immanuel, his German roommate, a hunch-

1. Quotations from the first two plays are from Ronald Ribman, *The Journey of the Fifth Horse* and *Harry, Noon, and Night* (Boston: Little, Brown, 1967). Quotations from *The Ceremony of Innocence* are from the typescript copy graciously lent me by the American Place Theatre.

backed homosexual who is physically and emotionally isolated from normal society. Their physical dislocation and isolation serve as metaphors for spiritual dislocation and isolation. The layers of pretence, deception, manipulation, and evasion in which Harry and Immanuel conduct their lives are peeled away to reveal finally their essential loneliness, frustration, and rage. Indicative of this revelation are the final words of each act. The first act closes as Harry shouts, "Him! Him!" and the second act as Immanuel cries, "His! His"! By the end of the third and final act, however, as Harry calls for his brother while being taken to the police station for disturbing the peace, Immanuel, "*in a voice full of rage*", his loneliness and emptiness fully apparent to him, cries after his roommate, "Me, Harry. What about me? Me!"

Based in part on Ivan Turgenev's story *The Diary of a Superfluous Man*, Ribman's second play, *The Journey of the Fifth Horse*, is actually an original work. Ribman creates a new framework which, interacting with Turgenev's tale, provides the major plot. The frame play derives from a paragraph attached to the end of Turgenev's story: an "editor" notes that after the last line of the deceased Chulkaturin's manuscript are words in a different hand:

*This manuscript was read
And the Contents of it Not Approved
By Peter Zudotyeshin
My My My
My dear Sir,
Peter Zudotyeshin,
Dear Sir.¹*

Turgenev's Zudotyeshin becomes Ribman's Zoditch, a reader in a publishing house. As Zoditch reads, the superfluous man's story is enacted. Always an acquaintance rather than a lover or friend, forever outside conversational groups, so afraid to express himself that his undefined self dwindles into an unexpressed longing, Chulkaturin is the extra guest at the party, the man whose personality never registers, whose name one never remembers, and to whom one never refers. He

1. I van Turgenev, *The Diary of a Superfluous Man, etc.*, trans. Constance Garnett (London: Heinemann, 1906).

is, in short, a superfluous man. Obviously symbolic of Chulkaturin's state is another character's description of a coach ride (in a passage taken from Turgenev):

Although the four horses we had were good and we were flying along, this madman insisted on adding a fifth horse. The poor horse was completely out of place, completely superfluous . . . And how was this unnecessary horse fastened to the carriage? Absolutely all wrong. By means of a short thick rope that constantly cut into his flank so that his flesh was at all times positively lacerated. How he expected the beast to run naturally when its entire body was arched in pain I don't know. And what was this lunatic's reaction when I informed him that we would do better without this superfluous horse? . . . He began lashing the horse, a dozen additional strokes across its back and swollen belly, and screaming out to the wind, "What the hell. It's been tied on, and if not to run then what the hell for?"

Through Zoditch's fantasies about his employer's daughter, his landlady, and his colleagues, as contrasted with the reality of his humiliation by them, we see that despite differences in class and temperament, he is Chulkaturin's spiritual brother. Although the characters in Zoditch's world appear in the enactment of Chulkaturin's story, emphasising the affinities between the lowly reader and the wealthy landowner, Zoditch refuses to recognise these resemblances. As the play ends, Zoditch rejects, first in anger and then in anguish, the truth about his own life as manifested in the confessions of Chulkaturin's life.

While the play was well directed by Larry Arrick, whose staging revealed its merits, the cast was, with one exception, worthless. The exception, fortunately, was at the play's core: Zoditch, played by Dustin Hoffman, who was Immanuel in Ribman's first play and who is now achieving international celebrity in Mike Nichols's film, *The Graduate*. With a dry-looking moustache and closely cropped hair that seemed to reveal a dried-up human being, with steel-rimmed glasses that implied a myopia of self-understanding, with an uncomfortable suit that indicated discomfort in social situations, and with carefully selected nervous mannerisms that demonstrated Zoditch's insecurity, Dustin Hoffman, in reality a pleasant-looking man in his middle twenties,

appeared to be the very incarnation of a shrivelled, ugly man in his middle thirties who had all his life been *de trop*.

Ribman's most recent play dramatises a kind of loneliness and isolation different from those explored in his previous works. The title of this play, *The Ceremony of Innocence*, is taken from William Butler Yeats' *The Second Coming*:

*Turning and turning in the widening gyre
The falcon cannot hear the falconer;
Things fall apart; the centre cannot hold;
Mere anarchy is loosed upon the world,
The blood-dimmed tide is loosed, and everywhere
The ceremony of innocence is drowned;
The best lack all conviction, while the worst
Are full of passionate intensity.*

The characters derive from English history, the reign of Ethelred the Unready (978-1016) and the Anglo-Danish War, though Ribman distorts history considerably. The plot appears to have been suggested by Jean Giraudoux's *The Trojan War will Not Take Place* (called, in Christopher Fry's English version, *Tiger at the Gates*). The immediate inspiration for the play appears to come neither from Ireland, England, nor France, but from the conflict in Viet Nam.

Under the influence of the Earl of Kent, King Ethelred concludes a peace treaty with King Sweyn of Denmark. England will pay an annual tribute to Denmark and also ensure the protection of those Danes who have settled in England. As assurance that Denmark will not pocket the money and then renew hostilities, King Sweyn leaves his daughter as hostage. Ethelred's treaty is unpopular with many, including his son, wife, and mother, who cry that he has compromised England's honour, which can be redeemed only by an immediate resumption of war in which the Danes are shown no mercy and which can conclude with nothing less than victory. Despite Ethelred's perseverance, the actions of those who would provoke a war appear to draw him toward war. Ethelred's son Edmund encounters four Danish farmers who, he claims, refuse to yield him the right of way over a bridge. Fighting them, he goes after them in what might be called "hot pursuit", chasing them,

perhaps accidentally, into land guaranteed the Danes by treaty, and killing all four. When Thorkill, the Danish ambassador, demands an explanation of the murder of these Danish farmers, Edmund — despite his father's entreaties — insolently insults the Danes. Thorkill, in a fit of temper, stabs Edmund. Although Ethelred is still determined to preserve the peace, he is unable to prevent retaliation from being visited upon the Danish hostage. Revenging her grandson's murder at the hands of a Dane, Ethelred's mother stabs King Sweyn's daughter. War seems inevitable. Until this point, Ethelred was not a staunch, unswerving advocate of peace but an apparently weak, good-hearted man hoping he was doing right while those around him, intensely sure of themselves, passionately insisted he was doing wrong. He drew moral strength chiefly from the Earl of Kent, architect of the Anglo-Danish peace treaty. Now, as King Sweyn's army lands in England ready to avenge the murder of his daughter, as even Kent urges Ethelred to lead the English in battle against the invaders, Ethelred finds his strength. Ethelred's world falls apart as it splits from the centre, anarchy and blood-letting rage, and his innocence disappears, but he courageously stands by his now firm convictions. When Kent tries to persuade Ethelred that justice should wait for another day, and that accident, futility, despair, and madness govern the world, Ethelred repudiates his erstwhile mentor:

Then you are mad. No peace? No justice? Though the cause be rotten I am to be driven into a war for it? Well, I will not be driven into a war for it. I will not add to injuries . . . I do not care that you find it easier to achieve purpose in your war than in my peace . . . If this be so then we have come to hell and know it not.

Nevertheless, the nobles are urged forward by the Archbishop's cry of "victory to us, death to them." Marching to battle, they leave Ethelred isolated, as far removed from the policy makers and military men of his time as he is from ours.

Unfortunately, Ribman's arresting drama was poorly served in its production at the American Place. With *The Journey of the Fifth Horse*, the solid performance of Dustin Hoffman at the centre of the play more than made up for the poor performances at the play's peri-

phery. With *The Ceremony of Innocence*, mediocre performances were at the centre, first rate performances at the periphery. Still, this particular production notwithstanding, Ribman's presence in the American theatre is invigorating. To call him a promising young playwright would be impertinent condescension. He promises, to be sure, but chiefly because he has already accomplished so much. His plays are not derivative of fashionable theatrical trends but are unique products of a writer who, to paraphrase the American Place's programme note has a voice of his own worth hearing on the American stage.

Prof. Bernard Dukore is Executive Officer of the Doctoral Program in Theatre at the City, University of New York. His books include "Twentieth Century Drama In England, Ireland, The United States" (co-edited with Ruby Cohn), A Bibliography of Theatre Arts Publications in the U.S. Works to be published by the University of Washington Press: "Bernard Shaw, Director" and an edition of "Saint Joan: A Screen-Play By Bernard Shaw". He is author of articles on Shaw, Harold Pinter, Brecht, Tennessee Williams, and other modern playwrights; these articles have appeared in Tulane Drama Review, Modern Drama, and similar periodicals. He is Associate Editor of the Educational Theatre Journal.

INDIAN MUSICAL SCALES

*Based on work done by the late Ustad Abdul Karim Khan and
Pt. Balakrishnabuwa; annotated and modernised by the Sangita
Prachar Mandal, Bombay*

Introduction

The research on the Basis of Indian Music, is a formalisation and an extension of the principles rediscovered by Khansaheb Abdul Karim Khan, after life-long experimentation and discussion based on training in a musical family dating from the times of Raja Man Singh — the family of Dhondu Nayak. The Thesis as it stands now is thus the result of a concentrated effort of a total of at least sixty years with a background of about four hundred years. The Thesis has recently been checked by modern methods of measurement and reasoning, and has been given a new form that is more amenable for setting out on paper and thus more in tune with the times. This note outlines the Thesis in this modern version while leaving the content of the work unchanged.

The Problem

1. What were the ancient basic scales, and on what principles were the scales constructed?
2. How did the different modes — *jatis* and *ragas* — arise? What was the principle governing them?
3. Did these principles and rules undergo gradual transition in course of time, or was there a sudden break with traditional theory with the advent of Muslim rule? Did South India break away from the music of the rest of India, at any time, at least as regards its basis?

4. Thus, does present-day classical Indian music have any direct link with ancient music? If so, what is the dynamics of present-day music? What characterises a *raga* to-day? What is the place of rhythm in such music? What is the importance of the time of the day for a *raga*? What is the place of words in music?
5. Is any modification necessary in the various 'systems' of Indian music accepted by our many music schools of to-day? Is any modification necessary in the method of teaching or in the prevalent notation system?

Background

The oldest available text, in Sanskrit, dealing with the basis of Indian Music is the 28th Chapter of the *Natyashastra* of Bharata, written certainly not later than 300 to 600 A.D., though some place it centuries before Christ. (There is considerable doubt about the date of the *Naradi Shiksha*, so we do not refer to it; and certain other works such as those of Kohala, Tumburu etc. are extinct). Then comes the work of Dattila (ca. 500 A.D.), Matanga (not earlier than 500 and not later than 1200 A.D.), then the book of Sharangdeva (ca. 1200 A.D.) and Kallinatha's commentary on it (ca. 1400 A.D.). About 1550 A.D. or so we find the books of Ramamatya and Damodar. Round about 1600 A.D. comes a plethora of books — those of Pundarika Vitthala, Ahobala, Lochana, Somanatha, Bhavabhata, Venkatamukhi, Shrinivasa, Raghunatha Bhupala and Hridayanarayana. In 1700 A.D. we have Shrikantha, and between 1750 and 1800 the compilations of Tulajiraje and Sawai Pratapsingh Rajee. In 1850, Surendramohan Thakur wrote his *History of Indian Music*, in English, from which many Westerners drew their data and conclusions.

On the supposition that none of these works lead to a consistent theory of Indian Music, Pandit Appa Tulsi (about 1900 A.D.) wrote five books, three of them in Sanskrit, in the make-believe that they were old works. Inspired by this approach Pandit Bhatkhande wrote two books in Sanskrit under the name of Chatur-Pandita; and four books (1912-1933) in Marathi under the name Vishnu Sharma, in which Chatur-Pandita was cited as authority for current music.

Clearly therefore, a rational solution to the problems should seek consonance with books written upto 1700 A.D. only.

The first systematic attempt at finding out the basis of scale-building, with the help of ancient texts, was made by Messrs. E. Clements I.C.S. and Rao-Bahadur R. G. Deval towards the close of the last century. They took the help of various musicians among whom they found Abdul Karim Khan the most suitable. This attempt died out, chiefly because the Khan could not agree to the scales derived as musically 'correct'. This attempt, however, gave impetus to others, among whom may be mentioned Achrekar, Telang, Mulay, Paranjpe, Feroz Framji, and Mehta. Their work is more or less on the same lines as those of Clements and Deval. Appa Tulsi gave this own derivation, which is cited by Bhatkhande. Bhatkhande had his own opinion or sets of opinions. Recently Prof. Swarup, Pt. Omkarnath, Pt. Brihaspati and others have produced their own systems, which again are more or less a re-arrangement of the Clements-Deval Structure. Thus there are perhaps as many interpretations as there are theoreticians; however, experimentation and demonstration is lacking. The only workers who are on record as having made experiments are Clements, Deval and Achrekar.

The Thesis

Abdul Karim Khan, parting company with Clements and Deval, worked on his own, and evolved his principles by experiments alone. Kapileshwari amplified and formally presented them in the context of old texts, and got them checked by modern methods.

We will now state this Thesis, show where why and how it differs from the work of the writers mentioned above, and try to draw comparative conclusions. The main passages from old texts, with which any new interpretation must tally, cover the following ground, so far as scales are concerned :

Octaves (*saptakas*) are in ascending order, each octave being 'double' of its lower one. Three octaves are in common use. Strings are the best means to explore scales. Within each octave there are seven notes (*swaras*) in ascending order, the *shadja* (*Sa*), *Rishabha* (*Re*), *Gandhara* (*Ga*), *Madhyama* (*Ma*), *Panchama* (*Pa*), *Dhaivata* (*Dha*) and *Nishada* (*Ni*). Each

octave comprises of 22 *shrutis* — a *shruti* may be a transient note, the imperceptible form of a *swara* (note), or a device to measure intervals between notes. As a matter of fact *shrutis* are innumerable, but 22 is the convenient chosen number. Intervals between *shrutis* are called *antah-shrutis*, (inner intervals), and they are very small (*keshagrava* = hair breadth). The intervals *Sa* to *Pa* measures 13 *shrutis*, and the interval *Sa* to *Ma* 9 *shrutis*. Notes which have an interval of 9 or 13 *shrutis* are called *samvadi* (consonant), notes with an interval of 20 *shrutis* — or by inversion 2 — are *vivadi* (dissonant); the rest are *anuvadi*. (Bharata). Or, notes separated by 8 or 12 *shrutis* are *samvadi*, notes separated by 1 *shruti* are *vivadi* (Sharangdeva). *Sa* has 4 *shrutis*, *Re* 3, *Ga* 2, *Ma* 4, *Pa* 4, *Dha* 3 and *Ni* 2; these are the pure (*shuddha*) notes. This makes for a systematic organization of notes called a *grama* (town), and the above organisation is the *shadja-grama* i.e. a *grama* on the tonic *Sa*. The other organisation is the *madhyama-grama*, which differs from this only in having its *Pa* one *shruti* lower; this lower *Pa* is called *madhyama* — *gramapanchama* (*madh-pa* or *ma g -pa*). A third *grama* called *gandhara grama* is also there but is obscure. *Ga* may be raised by two *shrutis* to make it “*Dha*-like”, or *Dha* may be lowered by two *shrutis* to make it “*Ga*-like”. Such displacement can be made for all notes and results in 4-*shruti*-intervals in a well-ordered way. Such a process is called *Svara-Sadharana*, and yields notes which are neither the original *shuddha* note nor the next *shuddha* note; the notes must however be given the name of the original note and not the next note. The displacement process is very fine and therefore is called *kaishiki*. The displaced *gandhara* is called *antara ga*, the displaced *nishada* is called *kakali ni*; *kakali* means resulting from effort or being very fine.

A demonstration of the 22 *shrutis* for the two *gramas* may be had by having two identical *vinas* tuned according to the *shadjagrama*. Keep one aside as the standard (immoveable). Convert the second to *madhyama grama* by lowering its *Pa*, the lowering is one standard *shruti*. Arrange the *shadjagrama* on this *vina* taking this lowered *Pa* as referant; there is a shift of one *shruti*. Repeat the process and you will find that the *Ga* and *Ni* of the standard (first) *vina* enter (i.e., are in unison with) the *Re* and *Dha* of this second *vina* being higher by 2 *shrutis*. Repeating once again, the *Dha* and *Re* of the second *vina* enter the *Sa* and *Pa* of the first, being higher by 3 *shrutis*. A fourth repetition makes the

Ma, *Pa* and *Sa* of the second *vina* face the *Ga*, *Ma* and *Ni* of the first *vina*. (Bharata).

Or, take two identical *vinas* with 22 strings each, and let their strings emit notes successively higher, the higher and higher sounds being according to the *shrutis*. Let *Sa* be on the 4th wire, *Re*, 3 units from it, *Ga* 5 units, *Ma* 9 units, *Pa* 13 units, *Dha* 16 units, *Ni* 18 units. (The working can also mean *Re* on the 7th wire, *Ga* on the 9th, *Ma* on the 13th, etc. The language used is not clear-cut.) Displace the notes of the second *vina* so that each note is emitted by the previous wire. The rest of the description of the process is the same as above — (Sharangdeva).

This is the minimum common basic structure on which any interpretation must rest. Certain salient points must here be stressed in the light of what follows:—

Vadi & Samvadi: Bharata clearly mentions that notes with an interval of 13 or 9 *shrutis*, such as *Sa* on the 0 (starting) *shruti* and *Pa* on the 13th, and *Sa* on the 0 and *Ma* on the 9th, are *samvadi* or consonant. (Some take *Sa* on the 1st *shruti*; this hardly matters if the whole gamut is shifted by 1 *shruti*, but if *Pa* is kept on the 13th, and *Ma* on the 9th *shruti*, serious inconsistencies arise, hence *Sa*, the start, must be on 0, the Octava, *Sa*, being on the 22nd).

Bharata also states that *vivadi* (dissonant) notes have an interval of 20 *shrutis*, i.e. by inversion, 2. Thus notes on *Shruti*-position 0 and 2, and 0 and 20, are dissonant, (though those on positions 2 and 20 are not dissonant). Sharangdeva's wording is different. He gives the *Sa* — *Pa* consonant interval as a 'separation of' 12 *shrutis*, and the *Sa*—*Ma* consonant interval as a 'separation of' 8 *shrutis*. This clearly shows that when Sharangdeva mentions such separation, his intention is that both the terminal *shrutis* are to be left out of account. Therefore when he gives the test for *vivadis* as a 'separation of' 1 *shruti*, it must be taken to mean that notes on *shruti*-positions and 0 and 2 are dissonant and not on position 0 and 1. This is absolutely clear from the context. However, strangely enough, every one without exception, from Clements upto Brihaspati, have taken as a basic fact that successive

shrutis are dissonant; i.e. those notes on *shruti* positions 0 and 1 are dissonant, and not those on positions 0 and 2. The reason for such an error has been traced and will be given in the sequel: here we have only to stress that **successive *shruti*-positions such as 0 and 1 do not give dissonant notes, but a 2-*shruti* interval such as 0 and 2 is dissonant.** (This was the first major contribution of Abdul Karim Khan made by actual experiments on the *tambura*). If *Sa* is sounded it is *vadi*, and *Pa* and *Ma* on the 13th and 9th *shrutis* are its *samvadis*; similarly if *Pa* is sounded it is *vadi* and *Sa* or *Re* are its *samvadis*. Thus *vadi* and *samvadi* are interchangeable terms, depending on the context.

2. *Svara-Sadharana*: The gist given above about getting 'intermediate' notes by a 2-*shruti* shift upwards or downwards, a process called a *Svara-sadharana*, is taken from Bharata, and the original wording is quite clear-cut and unambiguous. Most other workers have either neglected it or have stated (e.g. Mulay) that it is not clear. An open mind not cluttered with bias, for a *vivadi* interval being or not being of 2 *shrutis*, will not find anything vague there. The conclusions therefrom are stressed again; and are almost exactly the old wordings themselves—

- a. a two-*shruti* shift is a very small one
- b. it is used to obtain a 4-*shruti* interval from an existing 2-*shruti* interval — *Re-Ga*, *Dha-Ni*

Therefore a 2 *shruti* interval plus a 2 *shruti* shift gives rise to a 4 *shruti* interval

- c. the operation results in intermediate notes
- d. the operation results in bringing order in the *grama*.

3. *The position of Sa*: Nothing is mentioned in the old books as to the position of *Sa*, but since the Octave is from *Sa* to *Sa*, it is the tonic or key note and therefore we have given it the *shruti* number 0. Certain books do say that *Sa* is on the 4th *shruti* from *Ni*, but this does not need the assumption that the Octave begins on *Ni* and ends on *Ni*. After all one has to fit 22 *shrutis* to the Octave, keeping the *Sa Pa* and *Sa Ma* intervals at 13 and 9 *shrutis*. If *Sa* is on the starting note, *Ni* will be 4 *shrutis* below the *Sa* (in the Octave) and the meaning is retained.

Some people have asserted that the old scales began on *Ni*, this is unwarranted and in fact leads to complications at a later stage. The reason for this error is connected with:

4. *The order of Shruti-intervals:* The books say *Sa* has 4 *shrutis*, *Re* 3, *Ga* 2 etc. From the above it will be seen that the intervals in *shrutis* are therefore to be taken as *Sa* 3 *Re* 2 *Ga* 4 *Ma* 4 *Pa* 3 *Dha* 2 *Ni* 4 *Sa*. Some persons however take them as *Sa* 4 *Re* 3 *Ga* 2 *Ma* 4 *Pa* 4 *Dha* 3 *Ni* 2 *Sa*. Which is the correct reading can be ascertained from other evidence. The first evidence is the one mentioned above, *Sa* is on the 4th *shruti* from *Ni*. This fixes the order as *Sa* 3 *Re* 2 *Ga* 4 *Ma* 4 *Pa* 2 *Dha* 2 *Ni* 4 *Sa*. Another evidence is found in the experiment on two *vinas*, the experiment called *sarana* (shift), given to demonstrate the 22 *shrutis* for the two *gramas*. The first shift takes the scale down by 1 *shruti*. The second shift takes it down by another one *shruti*, since it is clearly stated that there is a two *shruti* flattening. And these two *shrutis* are stated to make *Ga* sound as *Re* and *Ni* as *Dha*. Therefore the intervals *Re* - *Ga* and *Dha*-*Ni* are 2 *shrutis* each. This again shows the scale to be *Sa* 3 *Re* 2 *Ga* 4 *Ma* 4 *Pa* etc. and not *Sa* 4 *Re* 3 *Ga* 2 *Ma* 4 *Pa* etc. There is other evidence too, but this should suffice. The reason for this misinterpretation has been located and will be made clear in the sequel.

5. *The Sarana Experiment:* There are two versions of this experiment — those of Bharata and Sharangdeva. Bharata's wording being clear, almost all writers have based their conjectures on it. Sharangdeva's wording is vague, but Appa Tulsi, relies entirely on it, and deduces therefrom that the 22 *shrutis* are nothing but 22 parts of an Octave; since *Sa* to *Sa* is 2 to 1, each *shruti* is the 22nd root of 2. He says that the 22 wires must be so tuned that each successive wire is at a frequency $22/2$ times the frequency of the previous wire. He says this is the "only way a change of *graham* is possible." Bhatkhande quotes him in extenso (anonymously) and stresses his case; however he (Bhatkhande) often casts doubts as to whether Sharangdeva had understood *shrutis*; then again Bhatkhande reverts to the Bharata method. In fact the whole of Bhatkhande's writing on the *shruti* topic is vague, diverse, disconnected and contradictory. The reason will be given in the sequel).

The answer to Appa Tulsi's approach is as follows:

Either Sharangdeva had no clear idea of the *Sarana* experiment (as Bhatkhande states in many places) or he did have. If he had no such idea the matter can be dropped. If he had, one must disentangle his words and get the meaning. He says, each wire is to be tuned a bit higher; how much? Different persons may tune differently — some may not even reach *Pa* after 22 wires, so that the experiment would not be possible. If the wires have to have an interval of $22/2$ or of $1,200/22$ cents = 54.54 cents between each pair, the blunt answer is, such a thing is impossible? No one can tune by ear correctly, to within an error of say 2 cents an interval of 54 or 55 cents, without reference to auxiliary notes. It is a physiological impossibility. Secondly, if all the intervals are equal, there is no need for 4 *saranas*, one will be enough or even 22 may not suffice. Thirdly, if one can accurately tune the wires in this manner, he has no need for the demonstration. Appa Tulsi's statement about 'change of *graham*' needs no answer because the meaning of *graham* is here distorted: A '*graha*' is a starting note for a musical piece, a *raga* or a *jati* and has nothing to do with scales as such.

To interpret Sarangdeva, only two lines of approach are useful:

1. To take, as translated by Bhatkhande, *Sa, Re, Ga, Ma, Pa, Dha, Ni*, on the 4th, 7th, 9th, 13th, 17th, 20th and 22nd wires, these being also the corresponding *shruti* - positions (with *Ni* = 0 position), the 2nd, 3rd, 5th etc. — intermediate — wires being just stretched to give any higher and higher intermediate frequencies, but without the attention being fixed on them, or,

2. To fill 3 Octaves in the 22 wires = 7 wires for the 7 notes of each Octave and the 22nd (last wire) ending the third Octave. (This is the version Kapileshwari prefers).

In either case, Bharata's experiment and Sharangdeva's become similar. (Bharata does not mention the type of *vina*; it may have had 7 wires and no frets, or at least one wire with at least 7 frets).

The Scale Thesis

The Octave has ratio, 2, 1200 cents, and this tallies with the texts which state that the Octave note (*tara-shadja*) is found on the mid-point

of the string; and this covers 22 *shrutis*. Thus 22 *shrutis* = 1,200 cents, ratio 2. The books say the *panchama* is found on 2/3rd of the string length; this has 13 *shrutis*. Thus 13 *shrutis* = 702 cents, ratio 3/2. Consequently, the 9 *shrutis* *Pa* to *Sa* = 1,200 — 702 = 498 cents, ratio 4/3, and this tallies with the statement that *madhyama* is found on 1/4th the string length.

There is absolutely no logical reason why we should not apply the *vadi-samvadi* rules of 13 and 9 *shrutis*, with the above measures, to get various *shruti* positions in the Octave. If others have fought shy of it, they have presumably been pre-occupied with preconceived notions, since they have not adduced any reasons of this action.

The *Pa* of *Pa* is $13 + 13 \text{ shrutis} = 26 \text{ shrutis} = 26 - 22 = 4 \text{ shrutis}$ reduced to the Octave. This measures $702 + 702 - 1,200 = 204$ cents, ratio 9/8. Similarly we get the 17th, 8th, 21st and 12th *shruti* positions at 27/16 ratio 906 cents, 81/64 ratio 408 cents, 243/128 ratio 1,110 cents, and 729/512 ratio 612 cents respectively. None of these give the *shuddha swaras* of the ancients, but the position-numbers and their measures are quite logical, and can be aurally determined by anyone exactly. The 12th, position is the *madhyamagrama panchama*, so that the *pramana shruti* = 13th — 12th *shruti* = 256/243 ratio, 90 cents.

Applying the rule of 9 *shrutis* in similar fashion, (or applying the rule of 13 *shrutis* in descending from *tara-shadja*), we get the following: 18th, 5th, 14th, 1st, 10th, *shruti* positions of 16/9, 32/27, 768/486, 256/243, 1,024/729 ratios or 996, 294, 792, 90, and 588 cents respectively. Here again the interval from the 0 to the 1st position comes to 256/243 ratio, 90 cents.

Arranging in serial order,

<i>Shruti</i>	0	1	4	5	8	9	10	12	13	14	17
position											
Cents.	0,	90,	204,	294	408,	498,	588,	612,	702,	792,	906,
<i>Shruti</i>	18	21		22							
position											
Cents.	996,	1,110,		1,200							

which yields the following relations —

4 *shrutis* = 204 cents, 3 *shrutis* = 114 cents, 1 *shruti* = 90 cents.

Check where you will, these relations hold constant between any notes.

This also gives a 2-*shruti* interval between positions 12 and 10. Its value is 24 cents. ($612 - 588 = 24$). It is the interval between the positions obtained by raising *Ma* by 1 *shruti* and lowering *Pa* by 1 *shruti*. It is the *shruti* interval between two *shrutis*, so it is an *antahshruti*.

Thus: 4 *shrutis* = 2 fifths (*Pa*) minus one Octave.
 1 *shruti* = 1 fifth (*Pa*) minus 3 such 4 *shrutis*,
 3 *shrutis* = 4 *shrutis* — 1 *shruti*,
 2 *shrutis* = [4 *shruti* — (1 *shruti* + 1 *shruti*)] an interval
 between two *swaras* (*swarashruti*)
 or 2 *shrutis* = 3 *shrutis* — 1 *shruti*. This is an interval between
 2 *shrutis*, therefore a minute *antahshruti*.

This gives the 3rd and 16th *shruti* positions at 114 cents and 816 cents respectively. Alternatively one may obtain the 3rd position from the 12th ($612 - 498 = 114$ cents), and the 16th position from this 3rd ($114 + 702 = 816$ cents).

The positions derive logically, they can be derived on strings by fifths and fourths and thus demonstrated, they can even be found by voice alone, and it can be ascertained that the resultant notes are currently used musical notes.

We thus get the two *grama* scales and the *shuddha swaras* —

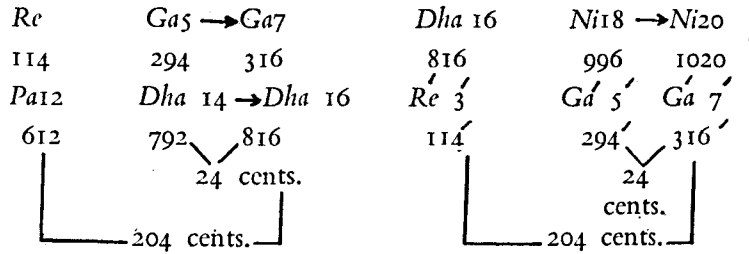
S. Grama Swaras	Sa	Re	Ga	Ma	Pa	Dha	Ni	Sa
<i>Shruti</i> position	0	3	5	9	13	16	18	22
Cents.	0	114	294	498	702	816	996	1200
M. Grama Swaras	Sa	Re	Ga	MaMa	GaPa	Dha	Ni	Sa
<i>Shruti</i> position	0	3	5	9	12	16	18	22
Cents.	0	114	294	498	612	816	996	1200

Ordering these two *gramas* on a 2-stringed *vina* with 7 frets, the 1st string being tuned to *Sa* and the 2nd string to *Ma*, we get *Dha* at the 14th position on *madhyamagrama*:

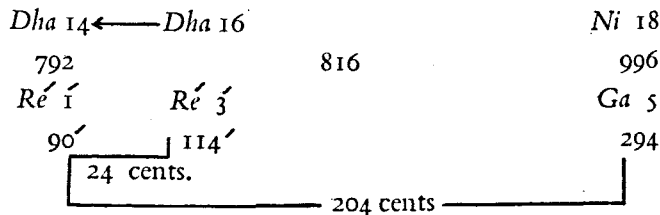
Sa	Re	Ga	Ma	Pa	Dha	Ni	Sa
0	3	5	9	13	16	18	22

<i>Ma</i>	<i>Pa</i>	<i>Dha</i>	<i>Ni</i>	<i>Sa</i>	<i>Re</i>	<i>Ga</i>	<i>Ma</i>
9	12	14	18	22	3	5	9

To raise this *Dha*, 14th, 792 cents, to the proper *shuddha Dha* of the 16th position, 816 Cents, we have to shift the second fret. The shift will change the position of *Ga* also in the 1st string, from *Ga* 5 to *Ga* 7. In each case the shift will be of $16 - 14 = 2$ *shrutis* or $816 - 792 = 24$ cents, a measure already deduced. The *Ga* 7 will be the *Antara Gandhara* of $294 + 24 = 318$ cents. Likewise, if we take this *Antara Gandhara* on the sixth fret of the second string, we shall have to shift the fret by 2 *shrutis* = 24 cents. This will result in changing the *Ni* 18 on the first string to *Ni* 20 (*Kakli Nishada* at $996 + 24 = 1020$ cents.) We shall get then the 4-*shruti*-intervals *Re* 3 *Ga* 7, *Dha* 16 — *Ni* 20 on the first string, and *Pa* 12 — *Dha* 16, *Re* 3 — *Ga* 7 on the second string, the measure of these 4 *shrutis* being 204 cents. *Ga* 7 and *Dha* 16 will be consonant, and *Ga* 7 and *Ni* 20 will be consonant, being 9 *shrutis* (498 cents) intervals.



Or, if we take the second-string *Dha* 14 (792 cents) as it is on the fifth fret of the first string, the shift of the fret will be 2 *shrutis* (24 cents) downwards, with the effect that the *Re* 3' (114' cents) on the second string will be lowered to *Re* 1' (90' cents). The positions 1 and 14 will be consonant and the resulting intervals 1 — 5, 14 — 18 will be 4 *shrutis*.



Likewise we can have the shifts 1-10, 9-11 etc. In each case: (a) the shift is small (24 cents) and has the value of 2 *shrutis*, (b) results in a corresponding 4 *shruti* interval, and (c) given an ordered consonance. Thus all the criteria of *Swarasadharana* are fulfilled. We get

Antara Gandhara Ga 7 = 316 cents.

Kakali Nishada Ni 20 = 1020 cents.

We also confirm that a 2 *shruti* interval ($90 + 90 = 180$ cents) + a 2-*shruti* shift (24 cents) = a four-*shruti* interval (204 cents).

It is possible to make this experiment at any time and place, even with the voice. It can be easily perceived that the 2 *shruti* shift of 24 cents is a dissonant interval if used by itself. Hence the *vivadi* nature of 2 *shrutis* can be ascertained. Thus this 2 *shruti* shift of 24 cents enables us to (i) raise a 1 *shruti* interval to a 3 *shruti* interval or lower a 3 *shruti* interval to a 1 *shruti* interval, and to (ii) raise a 2 *shruti* (*Svara shruti*, 180 cent) interval to a 4 *shruti* interval, or lower a 4-*shruti* interval to a 2-*shruti* (180 cent) interval.

The whole scheme is practical, in conformity with the texts, self consistent and logical.

That the resulting notes are musically correct can be theoretically ascertained from any work on musical accoustics (not an elementary physics text book). That they are in use even to-day can be easily ascertained. They will be found to be as under:—

<i>Shruti</i> position	0,0 cents, is the <i>Sa</i>	
„ „	9,498 cents, is the <i>komal Ma</i>	
„ „	13,702 cents, is the <i>Pa</i>	
„ „	22,1200 cents, is the <i>tara Sa</i>	
„ „	1,90 cents, is the <i>komal Re</i>	) as used in
„ „	5,294 cents, is the <i>komal Ga</i>	) <i>Bhairavi</i> , for
„ „	14,729 cents, is the <i>komal Dha</i>	) example
„ „	18,996 cents, is the <i>komal Ni</i>	)
„ „	4,204 cents, is the <i>teevra Re</i>	) as used in
„ „	8,408 cents, is the <i>teevra Ga</i>	) <i>Yaman</i> for
„ „	12,612 cents, is the <i>teevra Ma</i>	) example
„ „	17,906 cents, is the <i>teevra Dha</i>	)
„ „	21,1110 cents, is <i>teevra Ni</i>	
„ „	3,114 cents, is the peculiar	
	<i>komal Re</i>	) as used in
„ „	16,186 cents, is the peculiar	) <i>Bhairava</i> ,

	<i>komal Dha</i>	)	<i>Mariva</i> , etc.
		)	As used in
		)	<i>chhayalaga</i> and
„	„	7,316 cents, is a transient	) <i>Sankirna</i>
	<i>komal Ga.</i>	)	<i>ragas</i> like
„	„	20,1020 cents, is a transient	) <i>Todi</i> , etc.
	<i>komal Ni</i>		

On *shruti* position 10, 588 cents, will be a peculiar *teevra Ma* as found in *Lalit*, which, close attention will reveal uses **two** *teevra Mas*: at 10, 588 cents and at 12, 612 cents.

If we raise the above *komal Ga*, 294 cents on position 5, by one *shruti* of 90 cents, we shall get a *teevra Ga* which is very nearly the same as the major third, ratio $5/4$, 386 cents, of Western harmonic music. This will have position 6, 384 cents. Similarly if we raise the *komal Ni*, 996 cents on position 18, by one *shruti* of 90 cents, we shall get a *teevra Ni* which is nearly the same as the major seventh, ratio $15/8$, 1,088 cents, of Western harmonic music. This will have position 19, 1086 cents. These two notes are the old *Sadharana Gandhara* and *Kaishiki Nishada* respectively. The special mention is made because all other 'theorists' hanker after these $5/4$ and $15/8$. Experiment will show that these are only transitory notes in our music, used in *Chhayalaga* and *Sankirna Ragas*. (Bharata does not mention *Sadharana Ga* and *Kaishiki Nishada*; however, these words and notes are found in books from Sharangdeva onwards. Here the operation enables us to convert a 4 *shruti* interval to a 3 *shruti* interval and vice versa; this is different from the 24 cents *Swarasadharana* of Bharata).

(The Western minor third, $6/5$, 318 cents, and minor sixth, $8/5$, 816 cents, are our *antara Ga* (nearly) and *shuddha Dha* 16. The Western diatonic semitone $16/15$, 112 cents, is nearly our *shuddha Re* 3. The Western major sixth, $5/3$, falls on our *shruti* position 15 at 872 cents. The Western minor tone, $10/9$, 182 cents, is our $1+1 = 2$ *shrutis* nearly. The syntonic comma, $81/80$, 22 cents is nearly our 2-*shruti* shift. The Western chromatic semitone $135/128$, 92 cents, is nearly our 1 *shruti*).

The whole scheme is thus proof against logic, music, present-day practice, old texts, musical acoustics, and fulfils all the conditions of a

scientific theory of freedom from extraneous ideas and biases, self-consistency, a minimum of conjecture and maximum of application and proof. It can be checked.

The scheme can be very properly summarised on the standpoint of musical acoustics, and any person acquainted with that science will at once grant its validity.

The ancient Indian scale system was Pythagorean, i.e. built up by successive fifths and fourths. This system gives major tones ($9/4$ ratio, 204 cents) as the large intervals and the Greek hemitone or Pythagorean Limma ($256/243$ ratio, 90 cents) as the smaller interval. The balance between the major tone and the hemitone ($204/90 = 114$ cents) is the apotome. The consonances thus are very sharp and determinate if attention is focussed on the fourths and fifths, and this makes for correct melody. However if we proceed by steps or degrees the sharpness of consonances varies; so that when necessary one has to flex the scale by tempering for short durations. The tempering interval is the Pythagorean comma of 24 cents. The temperament is thus not cyclic but linear, and cannot be analysed in stepwise fashion by successive notes but must be taken as a whole and the fourths and fifths analysed.

(For the benefit of those not conversant with musical acoustics we must emphasise that the above is a system known for long and acknowledged as perfectly valid in acoustics, physiological acoustics, aesthetics and the psychological side of music dealing with sensations of the tone. The point, that the system is not very well suited for polyphony and useless for harmony, is irrelevant here, and anyway no evidence exists that our music had or now has polyphony or harmony.)

The principle of scale-building, in terms of *shrutis*, can be stated as under:—

Application of the *Sa Pa* relation of 13 *shrutis* (702 cents) results in getting five 4 *shruti* intervals (204 cents) and two 1 *shruti* interval (90 cents) within an octave. If a 4 *shruti* interval is decreased by 1 *shruti* we get 3 *shrutis* ($204 - 90 = 114$ cents); and for this purpose we can either lower the second note by 1 *shruti* or else raise the first note by 1 *shruti*. Both operations are however not permissible simultaneously:

if such simultaneous raising of the first note and lowering of the second note is performed at all, we get $4 - 2 = 2$ -*shrutis*, which is a minute interval, $(204 - 90) - (0 + 90) = 114 - 90 = 24$ cents, between two successive *shrutis* and therefore an *antahshruti*. If we make two successive sharpenings or flattenings of 1 *shruti* each, $(90 + 90 = 180$ cents), we again reduce the 4 *shruti* interval to this 2 *shruti*-interval; $204 - 180 = 24$ cents. In either case the 2 *shruti* interval of 180 cents (the *Svarashruti* interval) or the 24 cents (the *antahshruti* interval) is considered dissonant in our ancient scales. (180 cents nearly equal the minor tone ratio 10/9, 182 cents, and is unsuitable for melody because the 'principle of the leading note' fixes our attention on 204 cents which are derived by the rule of the fifths, and these 204 cents are very near 180 cents, so that the minor tone gets a by-pass).

Thus, in each 4 *shruti* interval, the musically useful tones in an octave are either the 1st note (0 cents) the 1 *shruti* (90 cents) and the 4 *shruti* (204 cents); or, the 1st note (0 cents) the 3 *shruti* (114-cents) and the 4 *shrutis* (204 cents).

If one asks, where is the 2nd *shruti*? The answer is obvious. The temperament goes by fifths, i.e. by major tones as a corollary; it is a linear temperament. In such a temperament one has to go only by differences of 13, 9, 4 and 1 *shrutis* (or consequently by the differences of 5 and 8 *shrutis* as well), (702, 498, 204 and 90 cents and consequently 294 and 408 cents); one is not to seek the serial order of *shrutis* 0, 1, 2, 3, 4, 5, 6, ... 20, 21, 22.

Nevertheless, if an answer is demanded it can be as under: the 2nd *shruti* is only an *antahshruti*, 24 cents higher than the 1st note, or 24 cents lower than the 2nd note. In the former case, the upper note (204 cents) is flattened by 1 + 1 *shruti* or $90 + 90 = 180$ cents ($204 - 180 = 24$ cents); in the latter case, the lower note is sharpened by 1 + 1 *shruti* or $90 + 90 = 180$ cents ($0 + 180 = 180$ cents).

1st note	0 <i>shruti</i> ,	0 cent	<i>svarashruti</i>	) difference is an
	2 <i>shruti</i> ,	24 cent	<i>antahshruti</i>	) <i>antahshruti</i> 24
				) cents
1st sharp	1 <i>shruti</i> ,	90 cent	<i>svarashruti</i>	) difference is an

2nd flat	3 shruti, 114 cent	swarashruti	) antahshruti	24
			) cents	
	2 shruti, 180 cent	antahshruti	) difference is an	
2nd note	4 shruti, 204 cent	swarashruti	) antahshruti	24
			) cents	

This answer is however meant only for those who do not know the analysis of a linear temperament and who know only cyclic temperaments from a reading of elementary books on sound; who are not familiar with enharmonic intervals wherein the lower note sharpened is different from the upper note flattened because successive notes are not necessary harmonic overtones or partials. The knowledge of such persons is confined to elementary information given in books which deal with the major diatonic scale which is necessary for harmony. The correct answer is that a linearly ordered sequence 0, 1, 2, 3, ... 21, 22 is not to be sought for *shrutis*.

Again, for the benefit of those who know only the diatonic intervals major tone (204 cents, 9/8 ratio), minor tone (182 cents, 10/9 ratio), diatonic semitone (112 cents 16/15 ratio) and syntonic comma of Didymus (22 cents, 81/80 ratio), we shall restate the principle.

The part left from a major tone by a diatonic semitone, viz. $204 - 112 = 92$ cents or $9/8 \times 15/16 = 135/128$ ratio, is quite a recognised and common interval and is known as a chromatic semitone:—

Now we shall neglect a 2 or 4 cent difference for the sake of this explanation, and equate 92 cents to 90, 112 to 114, 22 to 24. With this accommodation, our principle is that in any major tone we can either have the division (diatonic semitone + chromatic semitone) or (chromatic semitone + diatonic semitone). Two diatonic semitones cannot be accommodated in a major tone, they will be $112 + 112 = 224$, i.e. 20 cents or nearly a syntonic comma more. Similarly two chromatic semitones will fall short of a major tone by $204 - (92 + 92) = 20$ cents, again nearly a syntonic comma. [With our figures of 90, 114, 180 and 24, the figures which again are recognised intervals for linear temperaments, this relation becomes even more exact $(114 + 114) - 204 = 228 - 204 = 24$, $204 - (90 + 90) = 204 - 180 = 24$]. Thus a diatonic

semitone exceeds a major tone by a comma, and 2 chromatic semitones fall short of a major tone by a comma. The comma is a dissonant interval, unavoidable in any temperament which accommodates a minor tone in any way, and its only use is to make the scale flexible for either melody or harmony by slight sharpening or flattening of certain note or notes to suit the musical context. Now our temperament is based upon fifths and fourths, and therefore upon major tones, we therefore try to avoid minor tones, and if a minor tone arises anywhere we sharpen it by a comma to get a major tone. Straight-forward logic has led us to the equations: major tone = 4 *shruti* interval, minor tone = 2 *shruti* (*Svara-shruti*) interval, diatonic semitone = 3 *shruti* interval, chromatic semitone = 1 *shruti* interval, and comma = 2 *shruti* difference interval (*antahshruti*). On this basis we have been able to interpret, in a rational way, the *shadjagrama*, the *madhyamargrama*, the *svarasadhara* and the effects of a *svarasadhara*, viz., change of a 2 *shruti* interval to a 4 *shruti* interval and the resultant consonance between notes. We have also been able to locate the ancient notes, the current notes, and the notes of Western music. There has been no stretching of ancient words or meaning, no flights of fancy, no hypothesis except that the rule of 5ths and 4ths is applicable throughout the scale. We have been able to show how and why a 2 *shruti* interval is dissonant. We have not taken a single step not sanctioned by physical and physiological acoustics or musical aesthetics, and have throughout kept a watchful eye to ensure that the old texts sanction our conclusions.

It is now easy to proceed to the *Sarana* Experiment. This experiment is in order to give a "demonstration of 22 *shrutis* in the two *gramas*" or in order to "get a test for the purity (i.e. the correctness) of the sound (i.e. notes)." "We have amply elaborated on the fact that the *shrutis* are not to be sought in an ordered array of 1, 2, 3 . . . etc.; hence the demonstration is not for the "22 places in the octave," but for showing how and why these places arise, and where. Also if the tallying-points of the *saranas* are not obtained one can see for himself that his ear has deceived him somewhere; so that the *Saranas* must be intended for those whose ear is not perfectly attuned to minute *shruti* differences. Such an ear can correctly judge consonances, fifths and fourths, and is rather vague in respect of other intervals smaller than a major tone.

Therefore the instructions of the *saranas* must be taken to mean instructions based on fifths, fourths, major tones and consonance of any given note with another. It is not correct to interpret a *sarana*-instruction as "lower a note by so many cents" because an ear which can do so does not need the experiment.

The two *vinas* may be with frets or without frets. In the former case even one wire and seven frets each will do, in the latter case at least eight wires were necessary for each *vina*. Mere wires are better for tuning exactly, rather than frets, because with frets, finger-pressure results in distortion due to increase in tension and length. The method being the same however, we shall imagine frets only because the experiment becomes more intelligible that way on paper.

The two *vinas* are identical in the intervals between frets (*samana-murchhana*). The *shadjagrama* intervals are: *Sa* 3 *Re* 2 *Ga* 4 *Ma* 4 *Pa* 3 *Dha* 2 *Ni* 4 *Sa*. The *madhyamagrama* intervals, which are to be set on the second *vina*, are *Sa* 3 *Re* 2 *Ga* 4 *Ma* 3-mg. *Pa* 4 *Dha* 2 *Ni* 4 *Sa*. The one cannot be changed into the other except by performing the *Sivara-sadhrana* (shift of a 2 *shruti* small interval) either on *Ga* of the *shadjagrama* *vina*, or on the *Dha* of the *madhyamagrama* (the former gives *Ga* 5, *Ga* 7, an upward shift, and the latter gives *Dha* 16, *Dha* 14, a down-ward shift). Since the *shadjagrama* *vina* is the 'standard' one, its notes are preferably to be *shuddha*, so *Ga* is not to be shifted. We therefore change *Dha* 16 to *Dha* 14 on the *madhyama-grama* *vina* and get, with similarly fret spacing:—

1st *vina*

<i>shadjagrama</i>	<i>Sa</i>	<i>Re</i>	<i>Ga</i>	<i>Ma</i>	<i>Pa</i>	<i>Dha</i>	<i>Ni</i>	<i>Sa</i>
	0	3	5	9	13	16	18	22
Cents.	0	114	294	498	702	816	996	1200

2nd *vina*

<i>madhyamagrama:</i>	<i>Ma</i>	mg. <i>Pa</i>	<i>Dha</i>	<i>Ni</i>	<i>Sa</i>	<i>Re</i>	<i>Ga</i>	<i>Ma</i>
	9	12	14	18	22	3	5	9
Cents.	498	612	792	996	1299	114	294	498

We automatically obtain the mg-*Pa*, 12th *shruti*, 612 cents. Now we have to make this "*Pa* a *shadjagrama shruti*"; hence the *Pa*-*Sa* relation,

which is $22 - 12 = 10$ *shrutis* in *madhyamagrama*, must be made 9 *shrutis*¹ so that *Sa* becomes $12 + 9 = 21$ *shrutis* from the original tonic, a flattening of 1 *shruti*. The instruction therefore means "loosen the string till the note emitted on the fret for *Sa* gives the 9 *shrutis* *Ma* of this *madhyamagrama* *Pa*" Frets are not to be disturbed. Hence, when *Sa* is lowered by 1 *shruti* = 90 cents, the second *vina* gives the following sounds:—

	<i>Ma</i>	<i>Pa</i>	<i>Dha</i>	<i>Ni</i>	<i>Sa</i>	<i>Re</i>	<i>Ga</i>	<i>Ma</i>
	8	11	13	17	21	2	4	8
Cents.	408	522	702	906	1110	24	204	408

The second fret should give a note which is in unison with the *Pa* of the 1st *vina*, this is the test, and this is the meaning of the words "a *shruti* has been lowered". This is how an ear which knows only 9 to 13 *shrutis* accurately can perform the *sarana*. Here we get a demonstration of 1 *shruti* = 90 cents, and of the *antahshrutis* 9 to 11, 0 to 2, equal to 24 cents each.

The second shift is made in the same way. We have the *madhyamagrama* *Pa* now of 522 cents, and *Sa* of 1110 cents, a difference of 588 cents or 10 *shrutis*. To make this *Pa* (522 cents), a *shadjagrama* *Pa*, we must have *Sa* 9 *shrutis* away from it, i.e. on $522 + 498 = 1020$ cents. This *Sa* will be lowered once again by 1 *shruti* of 90 cents. The instruction is : "loosen the wire till the sound of the fret for *Sa* is the 9-*shruti* *Ma* of the (new) *Pa*." We get —

	<i>Ma</i>	<i>Pa</i>	<i>Dha</i>	<i>Ni</i>	<i>Sa</i>	<i>Re</i>	<i>Ga</i>	<i>Ma</i>
	7	10	12	16	20	1	3	7
Cents.	318	432	612	816	1020	1134	114	318

Thus the *Ni* and *Ga* of this *vina* have tallied with the *Dha* 16 and *Re* 3 of the first *vina* exactly. This is the criterion for the use of the untrained ear. Here again we get the *antahshruti* 10 and 1 being 24 cents higher than the 8-*shruti* (present day *teevra* *Ga*) note, the 21-*shruti* (present

1. The texts read; "Panchama has been lowered by one *shruti*; make that (*Pa*) alone by itself (*tam-eva*) a *shadjagrama* (*shruti*) by the use of (the principle of) *panchama*" which means *Pa* 13—*Pa* 12, *Pa* 12-*Sa* 21. The *vina* remains a *Madhyamagrama* *vina*.

day *teevra Ni*) note; while the *antahshrutis* 7 to 20 are already discussed as *antara Gandhara* and *Kakali Nishada*.

Now, the important point. *Ni* has become *Dha*, and *Ga* has become *Re* as on the standard *vina*. We must take note of these *shuddha-swaras*, and re-christen the above as

	<i>Ga</i>	<i>Ma</i>	<i>Pa</i>	<i>Dha</i>	<i>Ni</i>	<i>Sa</i>	<i>Re</i>	<i>Ga</i>
	7	10	12	16	20	1	3	7
Cents.	318	432	612	816	1020	1134	114	318

(because we cannot call 816 cents *Ni* and so on).

For the next shift the instruction does not state a flattening of 1-*shruti*, it says the *Dha* and *Re* must tally (be in unison with) the *Pa* & *Sa* of the 1st *vina*, because "there is a 2-*shruti* difference," we do not have to set *madhyamagrama* or *shadjagrama* on the above, because the intervals now are *Sa* 2 *Re* 4 *Ga* 3 *Ma* 2 *Pa* 4 *Dha* 4, *Ni* 3 *Sa*, which are neither here nor there. The instruction for the ear is thus merely: "loosen the wire till the *Dha* sounds exactly like *Pa* 13 (702 cents) and *Re* 3 like *Sa* (1,200 cents). The shift here is 3-*shruti* 114 cents, and we get —

	<i>Ga</i>	<i>Ma</i>	<i>Pa</i>	<i>Dha</i>	<i>Ni</i>	<i>Sa</i>	<i>Re</i>	<i>Ga</i>
	4	7	9	13	16	18	22	4
Cents.	204	318	498	702	816	996	1200	204

which must be re-christened, as argued above as,

<i>Re</i>	<i>Ga</i>	<i>Ma</i>	<i>Pa</i>	<i>Dha</i>	<i>Ni</i>	<i>Sa</i>	<i>Re</i>
4	7	9	13	16	18	22	4

The instruction for the fourth and last shift is *Ma* — *Ga*, *Pa* — *Ma*, *Sa* — *Ni*; hence this shift is 204 cents or 4 *shrutis*; and we get

	<i>Re</i>	<i>Ga</i>	<i>Ma</i>	<i>Pa</i>	<i>Dha</i>	<i>Ni</i>	<i>Sa</i>	<i>Re</i>
	0	3	5	9	12	14	18	22
Cents.	0	114	294	498	612	792	996	1200
			(= <i>Ga</i>)	(= <i>Ma</i>)			(= <i>Ni</i>)	

since this is the last shift, re-christening is redundant.

Thus the *saranas* enable the checking, by an untrained ear, whether his original notes (wires or frets) were correctly set, they demonstrate how a 1 *shruti*, a 3 *shruti* and a 4 *shruti* interval arises, and what is the meaning of an *antahshruti* (of 24 cents) and how it can occur above or below a given note. The *saranas* do not give 22 separate positions.

Sharangdeva's instruction to take the *sivaras* on the next wire at a time checks, if we look to the above tabulations. Take the three *sivaras*, *Ma* 9, *Mg* *Pa* 12 and *Pa* 13. In the *madhyamagrama vina*, *Pa* 12 was on the 1st fret. Next it became 13 on the 2nd fret. Then *Pa* 12 was taken on this 2nd fret. Next *Pa* 13 was taken on the 3rd fret. Lastly this *Pa* 13 shifted to the fourth fret. (A certain vagueness about this does, however, exist).

The *saranas* cannot give 22 separate *shrutis* unless the shifts are made of the order of 22 or 24 cents, 77 or 66 cents and 90 cents. But such shifts require a trained ear, for whom the experiment is redundant. Further, theoreticians who tried to evolve such values have not been able to decide first as to what the scale was. Failing the scale, it is no use proceeding to *saranas*. We have established the scale on an independent basis, proof against verbal hairsplitting: the *saranas* must follow. The above seems the most rational interpretation¹.

4. The Scale Thesis: Critique

As stated above, all other theoreticians have had an approach similar to that of Clements and Deval.

The essentials of these works are: (1) an utter reliance on the hypothesis that the major diatonic scale must have had something to do with our basic ancient scales; (2) a firm belief that the major third, ratio 5/4, 386 cents, being an upper partial, must exist in our scale, since it is a natural note. (We have shown, and anyone can check, that our *teevra Ga* is the *teevra Re* of *teevra Re*, i.e. 2 major tones = 408 cents, and

1. The above interpretation of *sarana* is not Kapileshwari's.

that this 'sacred' $5/4$ th occurs in our music only as a peculiar *sadharana gandhara*.)

Further, since 4 *shrutis* = major tone 204 cents ($9/8$), these persons argued that 3 *shrutis* must be slightly less than this, 2 *shrutis* still less, and one *shruti* still less. Having accepted the major third of 386 cents ($5/4$) as a must, a minor tone was inescapable because $386 - 204 = 182$ cents. This showed our music had a major and a minor tone as "essentials", thus a syntonic comma of 22 cents became inevitable, so also a diatonic semitone of 112 cents. The hypothesis that 3 *shrutis* = 182 cents, minor tone, 2 *shrutis* = 112 cents diatonic semitone, 1 *shruti* = syntonic comma, 22 cents, thus became irresistible and was adopted. Since the 'sacred' major third of 386 cents was a major tone plus a minor tone, its value came to $4 + 3 = 7$ *shrutis*, so that 7 *shrutis*, $13 - 7 = 6$ *shrutis*, $9 - 7 = 2$ *shrutis* and $22 - 7 = 15$ *shrutis* became consonant intervals (and not 5 *shrutis* and 8 *shrutis*). Since *Ma* 9 *shrutis* = 498 cents and *Pa* 13 = 702 *shrutis* were inescapable, *Ga* 5 *shrutis* = 294 cents was a must, so *Ga* 7 — *Ga* 5 = $386 - 294 = 92$ cents, the chromatic semitone, was also granted as a 2 *shruti* interval used "sometimes". The question was, how to fit all this into the system of $3 - 2 - 4 - 4 - 3 - 2 - 4$ *shrutis*.

The diatonic major scale is

Notes	C	D	E	F	G	A	B	C
Ratios.	1	$9/8$	$5/4$	$4/3$	$3/2$	$5/3$	$15/8$	2
Cents.	0	204	386	498	702	884	1088	1200
Cents		204	182	112	204	182	204	112
Steps.								
So-called <i>Shruti</i>		4	3	2	4	3	4	2
Steps.								

Various 'theories' thus arose to interpret this anomaly:—

- (1) C corresponds to our *shuddha Ni*, D to *Sa*. The scale is D to D (Clements, DeVal, Achrekar, Framji).
- (2) The ancients did start their octave on *Ni* itself and not on *Sa* at all; their open string was *Ni* (Mulay).

- (3) The old scale was D to D, but after the Muslim invasion some revolution took place and we now have the scale C to C (Mulay, Metha, Bhatkhande, Omkarnath).
- (4) Nothing need be changed, the ancient scheme was *Sa* 4 *Re* 3 *Ga* 2 *Ma* 9 *Pa* .. and not *Sa* 3 *Re* 2 *Ga* 4 *Ma* 4 *Pa* .. (Bhatkhande and others).

(As a corollary:— The old octave was that of *Kafi*. The old octave was that of *Bilawal*. 3. The old octave was that of *Kafi*, but some revolution took place and now it is no longer *Kafi* but *Bilawal*. (4) The old Octave was *Bilawal* and now it has become *Kafi*).¹

Then again, the A of ratio $5/3$, 884 cents, conflicted with the *shruti* order 4-3-2-4-4-3-2 for *shadjagrama*. It had therefore to be raised by “1 *shruti* of 22 cents”, and became 27/16, 906 cents, 17th *shruti*.

Now came another controversy. Those who said the old “D” is the present *Sa* could assert that the old A was the same as the present *Dha* and therefore old *Pa*. The old *madhyamagrama Pa* was then $5/3$, *shadjagramapanchama* being 27/16. Others who stated *Pa* was the same throughout, viz., $3/2$ (G), had to put *madhyamagramapanchama* at $3/2 \times 80/81 = 240/162$, 702 — 22 = 680 cents.

The temperament being cyclic, a linear order of *shrutis*, 0, 1, 2, 3, 4 22 began to be sought. For this purpose, the *saranga* experiment was invoked — on paper. 22 cents = 1 *shruti* as the first shift was of course granted. The idea was that in the four successive shifts, *Pa* 13 becomes 12, 11, 10 and 9 *shrutis*. Now 13 — 12 = 22 cents, and so 204 — 22 cents (= 182 cents) remained to accommodate the remaining three shifts. 22 x 3 was too small, so various ‘theories’ came into being. For example, whether to take the first 22 cents shift for *Re* as (204 — 22) cents or (182 — 22) cents and so on.

Prof. V. G. Paranjpe dressed out some simple algebra and “proved” that the four shifts were of 22, 90, 70 and 22 cents respectively. As musicians do not know mathematics, and mathematicians usually do

1. However, no practicing musician will admit using minor tones either in *Kafi* or in *Bilawal*. On this and such other points, Abdul Karim Khan dissociated himself from Clements & Deval.

not bother about the 'theories' of music along with Sanskrit jargon, the proof was acclaimed as a major piece of research. But again, since a "minor tone had only 3 *shrutis*", the question came as to whether the shifts for a minor tone should be 22, 90 and 70 or 90, 22 and 70, and so on and "*shruti* tabulations" began. Different names were given to these cent-values since all these "represent one *shruti*".

Pandit Omkarnath for example has stated that if we take successive fifths twelve times, we do not reach the octave, but exceed it by 1 *shruti* whose value is 22 cents ($81/80$), the Didymus' comma. He then tabulates the 22 *shrutis* by the above procedure. Any one can see that the excess is indeed 22 (or rather 24 cents), but the *shruti* value is not 1 but 2 : $13 \times 12 = 156 \text{ shrutis} = 156/22 = 7 \text{ octaves and plus } 2 \text{ shrutis, not } 1$; also $702 \text{ cents} \times 12 = 8,424 \text{ cents} = 7 \text{ octaves} + 24 \text{ cents}$. Even on the basis of what he writes, he should have realised that 22 (or 24) cents equals 2 *shrutis* and not 1, and this 2 *shruti* interval is dissonant.

There is nothing further done in this respect. Even criticism is superfluous; but a lot of harm has been done, so comments become necessary.

Firstly, witness that the whole structure is one of hypotheses. No experiments were performed. Clements and Devals' monochord experiments led them to frustration because they did not get musicians' sanction to minor tones. In spite of this warning, others pressed on with the same hypotheses. The real fact that our music used a double major tone, 408 cents, for *teevra Ga* did not deter them from asserting that the ancients, at any rate, must have used 386 cents. Thirdly, conjectures about 'revolution during Muslim rule' led to the impression that present-day music is something different, and that South Indian music is more true to the old texts and therefore entirely separate from other Indian music. (Bhatkhande holds entirely to this view). The real meaning of *Sadharana* and *antara gandhara* and of *Kakali* and *Kaishika nishada*, was entirely lost, as also the purpose for which they were given. Naturally *madhyamagrama* ceased to have any meaning in these contexts.

But the worst harm done was to the cause of music itself. The major diatonic scale, whose notes (except for F, our *Ma*, taking C-

Sa) nearly approach-with small differences — our present *teevra* notes, having been taken as the ancient scale, and since the notes of the ancient basic *shadjagrama* scale were called *shuddha* notes, it became the fashion to equate *shuddha* with *teevra*, except for *Ma*, which is called *shuddha* at the 9th *shruti* or sometimes *komala*, and *teevra* on sharpening. This confusion of the old *shuddha* with modern *teevra* made a rational reading of old books impossible, and led to various theorisations. (We have amply demonstrated that the old 'shuddha' is the modern 'komala', except for *Pa*; the old *madhyamagrama Pa*, is the modern *teevra Ma*). The second tragedy is in respect of intonation. The real meaning of *shruti* - relations having been obscured, the whole of the basic structure has been thrown aside, and new 'systems' based on the diatonic scale have arisen, which of course cannot attend to the fineries of the consonances of 13, 9, 8 & 5 *shruti* intervals which are so essential to melody. The ancient system of *murchchanas* (change of Key) having been thrown overboard, improvisations have become stereotyped and monotonous. This had its reaction on the part of 'classically trained family musicians,' who naturally stuck to their own tradition, so that two types of 'classical' music arose — the traditional and the one taught in schools. The net result in the long run was, newfangled music-forms arose, especially in the cinema world, and this type of music knowing no limits and being free to express itself anyhow it pleased, was far from tedious, with the result that the popular appeal of classical music as a whole has begun to die out.

The mistake arose with the reverence for $5/4$ and the diatonic scale. If Clements and Deval had only read their Helmholtz, from which they drew upon, carefully, they would have seen their error, $5/4$ may be a partial but is not a perfect consonance. It came into Western music, even, at a very late date, bringing the diatonic scale with it. It became indispensable for harmony no doubt, but not for melody which is the only thing our music knows. The human ear, playing or singing one-part (solo) music without accompaniment, prefers notes higher than $5/4$, round about 400—410 cents, 408 cents, the Pythagorean major third, held sway for melody and even to-day is recognised as such. All these things, which every musical acoustician knows, are already there in Helmholtz's book (about 1884). Further, if Clements and Deval wanted a link-up with the outside world, they could have had a sense of

history: Bharata wrote certainly not later than 300—600 A.D., and should have been compared not with the Diatonicians, but with old Arabic, Persian and Greek musicians: their scales are given in detail by Helmholtz and his translator, Ellis, as resulting from actual experiments, - and they have Pythagorean and similar scales, not using ratios of $5/4$, $6/5$, $8/5$, $15/8$ and so on.

Theorists coming after Clements and Deval borrowed their knowledge from the former, and the blunders multiplied.

Bhatkhande was the only exception: he seems to have realised that we do not use $5/4$ but $81/64$, not $5/3$ but $27/16$. But he seems to have been reconciled to the diatonic scale. Further, his main objective being to list *ragas*, to classify them and to describe them, he had to draw upon medieval books (ca. 1600 or so) only in some of which the *shuddha-teevra* terminology crops up; he was also enamoured of Venkatamakhi because of his classification system; so that instead of taking the basis from the ancients (Bharata etc.) and tracing it down to Venkatamakhi, he somehow put everything together. The result is a mix-up of the *shuddha-teevra* terminology along with some vague mention of *shruti* stipulations, with consequent entanglements. Therefore every time he cites an old reference he has to withdraw into his own shell and — finally quote only Appa Tulsi and Chaturapandita as authorities. Hence his *ra ga* system had to be content only with an enumeration of *vadi*, *samvadi*, other notes used, and the ascents and decents within an octave. The 'System' thus became lopsided, and what could have been the greatest triumph fell short.

The net result of all the above situation has been, such a firm rooted belief in the Clements' et al, and Bhatkhande's and other theories, that any original logical experimental work like that of Kapileshwari is neglected. The following points especially are considered sacriligious:—

1. It is a 2 *shruti* interval that is non-musical.
2. *Shrutis* are not ordered in serial order.
3. In a major tone we can locate only one musical interval.
4. Minor tones are not regular intervals in our melodies. They (minor tones) are 2 *shrutis*.

5. We have the Pythagorean major third, and not the $5/4$, as our *teevra Ga*.
6. The ancient basic scale was similar to our *Bhairavi*, not *Kafi* or *Bilawal*.
7. 3 *shruti* intervals give *komala swaras*, not *teevra*.
8. A one-*shruti* interval is a 'must' in any octave. Its value is immutable.
9. Our consonances go by 22, 13, 9, 8, 5 *shrutis* and not 22, 13, 9, 7 & 6 *shrutis*.
10. The ancients' *shuddha swaras* are our present *komala*, not *teevra*.
11. No major revolution took place, neither any major basic cleavage with South India, after the Muslim invasion.

We end this section by summarising points on which Kapileshwari's work should be acceptable to other 'theories' if they want a common ground:

Kapileshwari	Value	Others
1. <i>Shruti</i> = 90 cents Musical interval <i>komala</i>	) Chromatic) Semi-Tone)	(2 <i>shrutis</i> = 92 cents, musical; (<i>komala</i> , but in the 2nd shift (of the <i>saranas</i> , 1 <i>shruti</i> = (90 cents.
2. 2 <i>shrutis</i> = 180 cents, an 'incidental' interval only. Nearly <i>teevra</i>	) Minor) Tone)	(3 <i>shrutis</i> = 182 cents, a (musically necessary interval. (Nearly <i>teevra</i> .
3. 2 <i>shrutis</i> difference = 24 cents, a dissonant interval used for flexing the scale only.	) Comma))	(1 <i>shruti</i> = 22 cents. used for (<i>shruti</i> locations. Musically (useless.
4. 3 <i>shrutis</i> = 114 cents. Musical interval, <i>komala</i>	) Diatonic) Semi-Tone)	(2 <i>shrutis</i> = 112 cents. (Musical interval, <i>komala</i> . (
5. The diesis of 66 cents arises only by difference, and has no musical relevance.	) Diesis))	(70 cents is a step in one of the (<i>saranas</i> , its value is 1 <i>shruti</i> , (musically irrelevant. (

The Grama and Murchchana Thesis

It has been demonstrated that, for the actual practice of music, only 4 and 1 *shruti* intervals will be useful in our music, because it is only by a suitable combination of such intervals that we get all notes of an octave consonant in pairs. In fact the *swarasadharana* has been laid down to get such consonances of 9 and 13 *shrutis* by changing a 2 *shruti* interval to a 4 *shruti* or a 3 *shruti* interval to a 1 *shruti* interval. Thus in the *shadjagrama*, Ga 5 is not consonant with Dha 16, it is consonant with Dha 14, 4 *shrutis* below the Ni 18. Ga 7 is 4 *shrutis* above Re 3, and is consonant with Dha 16, but not with Ni 18 — it is consonant with Ni 20, 4 *shrutis* above Dha 16. But this Ni 20 is not consonant either with Ma 9 or Sa 22. Similarly with the *madhyamagrama*. To secure maximum consonance, we must reduce the Dha 16 and Re 3 of *shadjagrama* to Dha 14 and Re 1. This will shift, automatically, the mg. Pa 12 to 10, and the Re 3 to Re 1, in *madhyamagrama*. We get :

<i>S-grama.</i>	Sa	Re	Ga	Ma	Pa	Dha	Ni	Sa
<i>shruti</i>	0	1	5	9	13	14	18	22
Cents	0	90	294	498	702	792	996	1200

<i>M-grama</i>	Ma	Pa	Dha	Ni	Sa	Re	Ga	Ma
<i>shruti</i>	9	10	14	18	22	1	5	9
Cents	498	588	792	996	1200	90	294	498

Here $Sa\ 0 + 9 = Ma\ 9$, $Sa\ 0 + 13 = Pa\ 13$; $Re\ 1 + 9 = Pa\ 10$ in *M-grama*, $Re\ 1 + 13 = Dha\ 14$; $Ga\ 5 + 9 = Dha\ 14$, $Ga\ 5 + 13 = Ni\ 18$, so that every note has a pair of *samvadis*. Now the scales are musically tuneful.

The *gramas* are a system of arranging the notes in corresponding order, so that one *grama* can react on the other and lead to a consonant scale; the *grama* scales permit mutual *swarasadharana* and the location of proper tones by *shruti*-intervals. But they are not scales to be sung or played: they must be made consonant if they have to be made use of in actual music.

It can be seen that the *shadjagrama* basic consonant scale is exactly the same as the scale of our modern — *Bhairavi* (or *Mukhari* as it is called

in South India), and the *madhyamagrama* basic consonant scale is the same *Bhairavi* with the *Pa* left out, and a *teevra Ma*, such as is used in *Lalat*, being used instead. (This *teevra Ma* is not the one used for *Yaman*, but a bit flat by a comma; *Lalat* uses both these *teevra Ma*'s).

The third *grama*, the *gandharagrama*, is not mentioned in Bharata. However; rather sketchy descriptions of it are found in *sharangdeva* (1200), Damodar (1400-*Sangitadarpana*) and Narada (1500 - *Sangita-makaranda*). It seems that in this *grama* we must have:—

1. A 3 *shruti* *Gandhara* on the open string.
2. *Ga* to take 1 *shruti* of *Re*.
3. *Ga* to take 1 *shruti* of *Ma*.
4. *Dha* to take 1 *shruti* of *Pa*.
5. *Ni* to take 1 *shruti* of *Dha*.
6. *Sa* has a 3 *shruti* interval, or *Ni* takes 1 *shruti* of *Sa*.

If the 3 *shruti* *Ga* is taken as *Re* = 114 cents + 114 cents, we get a musically impracticable gamut starting on 228 cents which is dissonant with both the other *gramas*. If we raise the *shuddha Ga* 5 by 3 *shrutis* we get *Ga* 8, the Pythagorean *Ga*, which is consonant with *Sa* and *Pa*. Also this *Ga* 8 is 1 *shruti* below *Ma* 9, and can be said to "take 1 *shruti* of *Ma*". Similarly a *Ga* 4 can be said to "take 1 *shruti* of *Re* 3." Thus we have (provisionally) the *shruti* positions 4 and 8. *Ma* 9 and *Pa* 13 are supposed to be there. *Dha* is 3 *shrutis* higher than *Pa* 13, when it takes "1 *shruti* of *Pa*" it becomes *Dha* 17. When *Ni* takes 1 *shruti* of *Sa* it becomes *Ni* 21, while *Ni* 18 is 1 *shruti* higher than *Dha* 17. *Ni* therefore is *Ni* 18 and/or *Ni* 21. The scale becomes.

	<i>Ga</i>	<i>Ma</i>	<i>Pa</i>	<i>Dha</i>	<i>Ni</i>	<i>Sa</i>	<i>Re</i>	<i>Ga</i>
	8	9	13	17	21 or 18	22	4	8
Cents	408	498	702	906	1110 or 996	1200	204	408

Comparing with the consonant scales of the other *gramas*, *Ni* 18 has to be omitted. Thus the consonant scale of *gandharagrama* is *Ga* 8, *Ma* 9, *Pa* 13, *Dha* 17, *Ni* 21, *Sa* 22, *Re* 4, *Ga* 8 — our modern *Bilaval*.

Or we may employ *madhyamagrama* to set this scale, when we have

	<i>Dha</i>	<i>Ni</i>	<i>Sa</i>	<i>Re</i>	<i>Ga</i>	<i>Ma</i>	<i>Pa</i>	<i>Dha</i>
	17	18	22	4	8	9	13	17
Cents.	906	996	1200	204	408	498	702	906

the present-day *Jhinjoti*.

Kapileshwari prefers *Jhinjoti* to *Bilawal* in the above.

Summing Up

<i>S-grama</i>	0	1	5	9	13	14	18	22
<i>M-grama</i>	9	10	14	18	22	1	5	9
<i>G-grama</i>	8	9	13	17	21	22	4	8
or	17	18	22	4	8	9	13	17

Thus all the three *gramas* are interconnected. Between them they give all the musically-useful main notes:

0, 1, 4; 5, 8, 9; 10, 13; 14, 17; 18, 21; 22.

Plus the *mg-Pa* of 12 *shrutis*. These, along with the *antahshrutis* obtained by raising or lowering them by 2 (24 cents), which are transient or incidental notes, is our basic structure.

In the above, *M-grama* is obtained by changing the Key-note (tonic) from 0 to 9 and taking from it the same order of intervals 1- 4- 4- 1- 4- 4- 4-.

But we can as well start with 9 as before and instead of repeating the above intervals, can repeat the notes themselves — 9, 13, 14, 18, 22, 1, 5, 9. The intervals taking 9 as the *Sa*, will become 4- 1- 4- 4- 1- 4- 4 or the *shruti* positions with 9 = 0 will be 0, 4, 5, 9, 13, 14, 18, 22; which will be exactly the same as our present *Jaunpuri*. The *Bhairavi* sung with *Ma* as *Sa* becomes *Jaunpuri*. This process is called *murchhana*. The old books state that the *Sa* of *shadjagrama* is found at the *madhyasthan* i.e. middle of the string, and *murchhanas* are to be carried out upward and downward starting from this *madhyasthan*. Thus the first *murchhana* is of course *Bhairavi*, the second starts from *Ni* 18, the third from *Dha* 14, the fourth from *Pa* 13, the fifth from *Ma* 9, the sixth from *Ga* 5, the seventh from *Re* 3. There are 7 *murchhanas* for each *grama*. The 3

gramas will thus have $7 \times 3 = 21$ *murchchanas*. However, these are interconnected and therefore duplicate each other, as will be clear from the tabulation below:

Shadjagrama-murchchanas

(1) from *Sa* (name *Uttaramandra*): present-day *Bhairavi*

<i>Sa</i>	<i>Re</i>	<i>Ga</i>	<i>Ma</i>	<i>Pa</i>	<i>Dha</i>	<i>Ni</i>	<i>Sa</i>	Cents
0	1	5	9	13	14	18	22	need not now be given

(2) from *Ni* (name *Rajani*): *Kafi*

Ni	<i>Sa</i>	<i>Re</i>	<i>Ga</i>	<i>Ma</i>	<i>Pa</i>	<i>Dha</i>	<i>Ni</i>
18	22	1	5	9	13	14	18
=	<i>Sa</i>	<i>Re</i>	<i>Ga</i>	<i>Ma</i>	<i>Pa</i>	<i>Dha</i>	<i>Ni</i>
	0	4	5	9	13	17	18

(3) from *Dha* (name *Uttanayata*): *Bilawal*

Dha	Ni	Sa	<i>Re</i>	<i>Ga</i>	<i>Ma</i>	<i>Pa</i>	<i>Dha</i>
14	18	22	1	5	9	13	14
=	<i>Sa</i>	<i>Re</i>	<i>Ga</i>	<i>Ma</i>	<i>Pa</i>	<i>Dha</i>	<i>Ni</i>
	0	4	8	9	13	17	21

(4) from *Pa* (*Shuddhashadja*) — *Panchama*-less *Bhairavi* type.

Pa	Dha	Ni	<i>Sa</i>	<i>Re</i>	<i>Ga</i>	<i>Ma</i>	<i>Pa</i>
13	14	18	22	1	5	9	13
=	<i>Sa</i>	<i>Re</i>	<i>Ga</i>	<i>Ma</i>	<i>Pa</i>	<i>Dha</i>	<i>Ni</i>
	0	1	5	9	10	14	18

(5) from *Ma*, *Matsarikrita* — *Jaunpuri*.

Ma	Pa	Dha	Ni	<i>Sa</i>	<i>Re</i>	<i>Ga</i>	<i>Ma</i>
9	13	14	18	22	1	5	9
=	<i>Sa</i>	<i>Re</i>	<i>Ga</i>	<i>Ma</i>	<i>Pa</i>	<i>Dha</i>	<i>Ni</i>
	0	4	5	9	13	14	18

(6) from *Ga*, *Ashvakraṇṭa* — *Jhinjoti*

Ga	Ma	Pa	Dha	Ni	<i>Sa</i>	<i>Re</i>	<i>Ga</i>
5	9	13	14	18	22	1	5
=	<i>Sa</i>	<i>Re</i>	<i>Ga</i>	<i>Ma</i>	<i>Pa</i>	<i>Dha</i>	<i>Ni</i>
	0	4	8	9	13	17	18

(7) from *Re, Abhirudgata — Yaman*

	Re	Ga	Ma	Pa	Dha	Ni	Sa	<i>Re</i>
	1	5	9	13	14	18	22	1
=	<i>Sa</i>	<i>Re</i>	<i>Ga</i>	<i>Ma</i>	<i>Pa</i>	<i>Dha</i>	<i>Ni</i>	<i>Sa</i>
	0	4	8	12	13	17	21	22

Madhyamagrama-murchhana(1) from *Ma, Souveri — Bhairavi*

	<i>Ma</i>	<i>Pa</i>	<i>Dha</i>	<i>Ni</i>	<i>Sa</i>	<i>Re</i>	<i>Ga</i>	<i>Ma</i>
	9	10	14	18	22	1	5	9
=	<i>Sa</i>	<i>Re</i>	<i>Ga</i>	<i>Ma</i>	<i>Pa</i>	<i>Dha</i>	<i>Ni</i>	<i>Sa</i>
	0	1	5	9	13	14	18	22

(2) from *Ga, Harinashwa — Kafi*

	Ga	Ma	Pa	Dha	Ni	<i>Sa</i>	<i>Re</i>	<i>Ga</i>
	5	9	10	14	18	22	1	5
=	<i>Sa</i>	<i>Re</i>	<i>Ga</i>	<i>Ma</i>	<i>Pa</i>	<i>Dha</i>	<i>Ni</i>	<i>Sa</i>
	0	4	5	9	13	17	18	22

(3) from *Re, Kavalopanata — Bilawal.*

	Re	Ga	Ma	Pa	Dha	Ni	<i>Sa</i>	<i>Re</i>
	1	5	9	10	14	18	22	1
=	<i>Sa</i>	<i>Re</i>	<i>Ga</i>	<i>Ma</i>	<i>Pa</i>	<i>Dha</i>	<i>Ni</i>	<i>Sa</i>
	0	4	8	9	13	17	21	22

(4) from *Sa, Shuddhamadhya — a panchama-less Bhairavi type.*

	Sa	Re	Ga	Ma	Pa	Dha	Ni	<i>Sa</i>
	0	1	5	9	10	14	18	22

(5) from *Ni, Margi — Jaunpuri.*

	Ni	Sa	Re	Ga	Ma	Pa	Dha	<i>Ni</i>
	18	22	1	5	9	10	14	18
=	<i>Sa</i>	<i>Re</i>	<i>Ga</i>	<i>Ma</i>	<i>Pa</i>	<i>Dha</i>	<i>Ni</i>	<i>Sa</i>
	0	4	5	9	13	14	18	22

(6) from *Dha, Pouravi — Jhinjoti.*

	Dha	Ni	Sa	Re	Ga	Ma	Pa	<i>Dha</i>
	14	18	22	1	5	9	10	14
=	<i>Sa</i>	<i>Re</i>	<i>Ga</i>	<i>Ma</i>	<i>Pa</i>	<i>Dha</i>	<i>Ni</i>	<i>Sa</i>
	0	4	8	9	13	17	18	22

(7) from *Pa, Hrishyaka — Kalyan*

	Pa	Dha	Ni	Sa	Re	Ga	Ma	Pa
	10	14	18	22	1	5	9	10
=	<i>Sa</i>	<i>Re</i>	<i>Ga</i>	<i>Ma</i>	<i>Pa</i>	<i>Dha</i>	<i>Ni</i>	<i>Sa</i>
	0	4	8	12	13	17	21	22

And similarly one can arrange the *Gandharagrama Murchchanas* —

Other types of *murchchanas* are also described in the books: they are the *Sadharanakrita murchchanas*, comprising *sakakali* (in which the *kakali Ni* 20 is used instead of the *shuddha Ni* 18), *santara* (in which the *antara gandhara Ga* 7 is used instead of the *shuddha Ga* 5), and the *sakakalyantara* (in which both *Ga* 7 and *Ni* 20 are used). This is however a matter of detail.

On the basis of these musically-useful scales, musical pieces were to be played or sung. They were the *Jatis* (types or modes) and were given the names *Shadji, Arshabhi* etc. (i.e. resulting from *Sa, Re* etc.). Other poetical names are also found.

It will be seen, from the above-mentioned similarity of the *murchchana*-scales with the modern *raga* scales, that our present *ragas* have direct connection with the old *Jati* system.

This matter of *murchchanas* has also been tackled by other theorists, but the difference between their work and Kapileshwari's is as follows:—

- (1) The *shruti*-values naturally differ.
- (2) Kapileshwari first makes *grama* scales consonant and then proceeds to *murchchanas* for reasons of musical practicability.
- (3) Kapileshwari points out that '*madhyasthana*' means the mid-point of the string; others take it to mean *Sa* or *Ma*. Thus the order of *murchchanas* changes.
- (4) Kapileshwari's sequence is *Sa, Ni, Dha* .. for *Shadjagrama*, *Ma, Ga, Re, Sa* .. for *Madhyamagrama*, *Dha, Pa, Ma* .. for *Gandharagrama* (or *Ga, Re, Sa* .. for *Gandharagrama*). The others have taken it variously as *Sa, Re, Ga* .. for *Shadjagrama*; *Ma, Pa, Dha* .. for *Madhyamagrama*, or even *Ma, Pa, Dha*, .. and *Sa, Re, Ga*, .. for *Shadja* and *Madhyamagrama*.

The really important points are the first two. Kapileshwari's work shows a direct relation between *murchchanas* and *ragas* by locating notes which can be demonstrated as being in actual use in *ragas* today and being the notes of the old consonant *grama* scales.

Continuity of Tradition

The next theme is to visualise whether the above system, existing at the time of Bharata, underwent modifications, if so, how and when. For this we have to go in the chronological order of books.

Bharata's work does not mention "Vikrita". He gives seven *shuddha* notes (our present *komala*), plus the *madhyamagrama panchama* (our present *teevra Ma*), and *antara gandhara* (nearly 6/5) on the 7th *shruti* and *Kakali nishada* (nearly 9/5) on the 20th. Thus he gives only $7 + 1 + 2 = 10$ notes. However, he gives the procedure of *svarasadhana* which enables us to obtain incidental notes by getting 4 *shruti* intervals at desired places in Octave with the aid of a 2 *shruti* (24 cents) sharpening or flattening. He has no names for such notes, because they can have any number.

Sharangdeva (1200 A.D.) seems to have performed this *Svara-sadharana* throughout the Octave, and thus arrived at 19 notes. Starting with the *shuddha* notes of Bharata; he mentions 12 more, which he calls *vikrita* varieties of notes. He states "*shadja* becomes *vikrita* in two ways, *chyuta* and *achyuta*, by 2 *shrutis*, and can be perceived in the *sadharana* and *kakali* type of *Ni* when *Re* takes up the *shruti* of *Sa* in *sadharana*, it becomes 4 *shruti* and then *vikrita* by one (*shruti*). *Sadharana* has 3 *shrutis*, *antara* 4, *gandhara* has two well known varieties without doubt. *Ma*, like *Sa*, is of two types, depending on *antara* and *sadharana*. In *madhyamagrama*, *Pa* is 3 *shrutis* in *Kaishika*, and assuming the *shruti* of *Ma* becomes 4 *shrutis*: thus two types. *Dha* in *madhyamagrama* is *vikrita* on 4 *shrutis*. *Ni* is 3 and 4 *shrutis* in *Kaishika* and *Kakali*. Thus twelve (notes) become *vikrita* (thus of two varieties), and these along with the seven *shuddhas* make nineteen."

The wording in some ways is indeed vague and ambiguous, but most of the sentences are clear. For example the wording about *Pa* reads:— *Pa* 13 becomes *Pa* 12 in *madhyamagrama*, this is 3 *shrutis* from

the lower *shuddha* note, *Ma* 9 (*Kaishika Pa*). If we lower *Ma* 9 by 1 *shruti* to *Ma* 8, this *Pa* 12 becomes 4 *shrutis* again. Similarly the *shuddha Dha* 16 is 4 *shrutis* from this *Pa* 12 and therefore should be called *vikrita*; (on the other hand, we get a *Dha* 14 at 4 *shrutis* from *Pa* 12, as also a 4 *shruti Dha* at 17 from *Pa* 13). We thus interpret the above passage thus:—

<i>Shuddha:</i>	<i>Sa</i> 0 (0 cents)	<i>Vikrita:</i>	<i>Chyuta Sa</i> 21 (1110 cents)
		<i>Vik. Re</i>	1 (90)
	<i>Re</i> 3 (114)	<i>Vik. Re</i>	4 (204)
	<i>Ga</i> 5 (294)	<i>Sadharana Ga</i>	6 (318)
	<i>Ma</i> 9 (498)	<i>Antara Ga</i>	7 (384)
	<i>Pa</i> 13 (702)	<i>Chyuta Ma</i>	8 (408)
		<i>Vikrita Pa</i>	10 (588)
	<i>Dha</i> 16 (816)	<i>Kaishika Pa</i>	12 (612)
	<i>Ni</i> 18 (906)	<i>Vikrita Dha</i>	14 (792)
	<i>Sa</i> 22 (1200)	<i>Vikrita Dha</i>	17 (906)
		<i>Kaishika Ni</i>	19 (930)
		<i>Kakali Ni</i>	20 (1020)

Total 19.

It is hereby apparent that Bharata's scale system has remained the same, but the various *shruti* positions, obtained from raising or lowering a note by 1 *shruti* in order to create 4 and 3 *shruti* intervals, have been given different names: the word *vikrita* is given to them as categories, the word *chyuta* has appeared, *sadharana* (which was the name for a process in Bharata) is now an adjective for *vikrita* notes, the names *antara* and *kakali* have been retained, the *kaishiki* is again an adjective for *Pa* and *Ni* varieties (whereas Bharata only meant 'very fine' by *Kaishiki*). Thus in the period of at least 600 years, between Bharata and Sharangdeva, the only change was this terminology. We also find the phrases: 'accepting — or assuming or taking — the *shruti* of' the lower note, which however does not denote a new procedure.

There is however another way of reading the passage, wherein the same note can be called *shuddha* from one angle and *vikrita* from another angle. Thus *Dha* 16 is a *shuddha* note and 3 *shrutis* higher than *shuddha Pa* 13; in *madhyamagrama* *Pa* is flattened to *Pa* 12, and *Dha* 16 becomes 4 *shrutis* away from it and hence, without changing its fre-

quency becomes *vikrita*. The same *Dha* thus can be called *shuddha* or *vikrita* depending on how we look at it. If the above view is taken, we have to omit the notes *Pa* 10 (588 cents) and *Dha* 14 (792 cents) from the list; so also the notes *Re* 1 (90 cents), *Ga* 7 (318 cents), *Ga* 6 (384 cents), *Ni* 20 (1020 cents) and *Ni* 19 (930 cents). Thus the number of *vikrita* notes reduces from 12 to 5, and the total number of specific notes in the octave comes to $7 + 5 = 12$.

This is the view taken by Ramamatya about 1500, i.e. 300 years after Sharangdeva. Ramamatya says: "It is true, Sharangdeva gave 12 *vikritas*, but I say they are only five; why? These *vikritas* are the varieties of the seven *shuddha* notes: now, if we lower the starting note, (i.e. depress it by 1 *shruti*, say), the original higher notes themselves become *vikrita* and nothing much is gained. Differences can arise by taking the *shruti* of the previous note or by omitting the previous *shruti* (viz. at *Sa* = 0, by making either $0 = 21$ or $0 = 1$); and in keeping the starting note unchanged, we do not lose our objective."

Thus Ramamatiya's notes becomes :—

<i>shuddha Sa</i> 0 (0 cents)	Called <i>shadja</i>
<i>shuddha Re</i> 3 (114 cents) or <i>Re</i> 1 (90 cents)	„ <i>shuddha rishabha</i>
<i>vikrita Re</i> 4 (204 cents)	„ <i>panchashrutika rishabha</i>
<i>shuddha Ga</i> 5 (294 cents) or <i>Ga</i> 7 (318 cents)	„ <i>shuddha gandhara</i>
<i>vikrita Ga</i> 6 (384 cents) or <i>Ga</i> 8 (384 cents)	„ <i>sadharana or chyuta-madhyama gandhara</i>
<i>shuddha Ma</i> 9 (498 cents)	„ <i>shuddha madhyama</i>
<i>vikrita Pa</i> 12 (618 cents) or <i>Pa</i> 10 (588 cents)	„ <i>chyuta panchama madhyama</i>
<i>shuddha Pa</i> 13 (702 cents)	„ <i>panchama</i>
<i>shuddha Dha</i> 16 (816 cents) or <i>Dha</i> 14 (792 cents)	„ <i>shuddha dhaivata</i>
<i>vikrita Dha</i> 17 (906 cents) or <i>Ni</i> 19 (906 cents)	„ <i>pancha shrutika dhaivata</i>

<i>shuddha Ni</i> 18 (996 cents) or	„ <i>shuddha nishada</i>
<i>Kakali Ni</i> 20 (1020 cents)	
<i>vikrita Ni</i> 21 (1110 cents) or	„ <i>chyutashadja nishada</i>
<i>Kaishika Ni</i> 19 (1086 cents)	

Here we find 1. a simplification: notes differing by 24 cents are theoretically traced to their source, but not given different names and treated musically as the same; and 2. new terminology for the *vikrita-svaras*: thus *chyutashadjanishada* shows it is a *Sa* flattened (by one *shruti*), which is in the range of *Ni*; *panchashruti Re* means a *Re* five *shrutis* above this *chyutashadjanishada*.

Thus we can say that in a way Ramamatya removed the extra complexity in names (not the structure) introduced by Sharangdeva and made the structure musically logical and more in accordance with Bharata's directives by taking 24 cents as a flexion and not as an interval, still, the musical system has not been affected.

We now come to Somnath (1600 A.D.), about a hundred years later and thus at least a thousand years, if not more, after Bharata.

Somnath is positive: "Previously they used to say there were twelve *vikritas*, in which those which have different (distinct) sounds are only seven and not five. *Achyuta Sa* and *Ma* are not different from *shuddha* — *Sa* and *Ma*, 4 *shrutis Re* and *Dha* are not different from *shuddha Re* and *Dha* nor is the *vikrita* 3 *shruti Pa* different from the 4 *shrut Pa*."

The stand Somnath takes is similar to that of Ramamatya, but it will be noticed that he equals 4 *shruti Re* with *Re* 3, 4 *shruti Dha* with *Dha* 16, and 3 *shruti Pa* with *Pa* 13. This is an obvious impossibility, and to reconcile it with musical fact one must assume that he counts four *shruti Re* as 21 + 4, four *shruti Dha* as 12 + 4, and 3 *shruti Pa* as 10 + 3. He must therefore take *Ni* 21, *Pa* 12 and *Ma* 10 (1110, 612 and 588 cents) among his notes. This is indeed the case: his names are: 1110 cents, *mridu Sa*, 612 cents, *mridu Pa* and 588 cents, *teevratama Ma*. By the same logic he has *mridu Ma* on the 8th *shruti* at 408 cents, and *teevratama Ga* on the 6th at 384 cents, *teevratama Dha* on the 17th at 906 cents and *teevratama Re* on the 4th at 204 cents. Thus in *teevratama* he raises the *shuddha* note by 1 *shruti* and in *mridu* he lowers a *shuddha* note by 1 *shruti*. Hence

the complexity introduced by Sharangdeva in stating 24 cents as specified intervals, which Ramamatya tried to eliminate, is again introduced. Somnath gives the names *teevra*, *teevratara* etc. for the intermediate notes he gets. We need not list all these notes here. We only notice that the words *teevra* and *mridu* are now beginning to be used, and that the compass of the name for each note is getting larger.

Pundarika Vithala, a contemporary of Somnath, has a simpler list. He omits *teevratara* and *teevratama*, and for *mridu* he writes *laghu*. The *Ma* 10 (588) he calls *panchashruti Ma*, perhaps because it is 5 *shrutis* (294 cents) higher than *shuddha Ga* 5 (294 cents).

In a similar way we can analyse the notes, *shuddha* and *vikrita*, given by various other authors; we find that the *shuddha* notes of all these persons are the same and the main *vikrita* notes, on positions 4, 8, 12, 17 and 21 (204, 408, 612, 906 and 1110 cents) are also given by them, the only difference being that different authors give different names to these. For example, the note on position 12, *madhyamagrama panchama*, is variously called *vikrita panchama*, *chyuta panchama*, *kaishika panchama*, *chyutapanchama madhyama*, *varali madhyama* etc. The note on position 4 (204 cents) is called *teevra rishabha*, *vikrita rishabha*, *chatushruti rishabha*, *panchashruti rishabha*. The note on position 17 (906 cents) is called *vikrita dhaivata*, *pancha shruti dhaivata*, *chatu shruti dhaivata*. The note on position 21 was called *chyuta shadja*, *chyutashadja nishada*, or *kaishiki nishada*. The note on position 8 was *chyuta madhyama*, *chyutamadhyama gandhara* or *antara gandhara*. This is the chronological order, which reveals a curious possibility.

Bharata's *antara gandhara* arose, as we have shown, out of a necessity to make that *Ga* 5 correspond with *Dha* 16, and thus *antara gandhara Ga* 7 was 318 cents, a comma higher than *Ga* 5 and thus a *komala swara*. The shift was 2 *shrutis*, 24 cents.

These later-day authors seem to have raised *Ga* 5 by 2 *shrutis* as stated by Bharata, but the measure of these two *shrutis* seems to have been taken as $90 + 90 = 180$ cents, thus making *antara gandhara Ga* 7 = $294 + 180 = 474$ cents, a comma flatter than the *shuddha Ma* 9, and thus even higher than our *teevra Ga*. The *antara gandhara* thus came to be regarded as a *teevra* note instead of a *komala* (in to-day's practice). Now Bharata

had no *sadharana gandhara* as a specific note, it came to be so specific in Sarangadeva and it was, as we have shown, $Ga\ 5 + 1\ shruti = Ga\ 6 = 384$ cents, a comma flatter than *teevra Ga*. What happened to this *teevra* note, the *sadharana gandhara* of old, when *antara gandhara* became a *teevra* note: its effect having been to raise $Ga\ 3\ shrutis$ from *Re* 3, these 3 *shrutis* being (*Re* 3, 114 cents 2 *shrutis*, 180 cents upto $Ga\ 5$ a further 1 *shruti* 90 cents; total 270 cents higher than *Re* 3); it is possible that this 3 *shruti* measure may have been taken as the usual 114 cents direct from *Re* 3: thus 114 cents + 114 cents = 228 cents, higher than *chatushrutika Re* 4 of 204 cents. In other words, the original *shuddha Ga* 5 (294 cents) was not shifted here and there, but 3 *shrutis* were taken upward from *Re* 3 direct, and 2 *shrutis* of 180 cents were taken upward from $Ga\ 5$ direct. Hence the old *sadharana gandhara*, a *teevra* note nearly equal to *teevra Ga*, now became a *teevra* note nearly equal to *teevra Re*; and the old *antara gandhara*, a *komala* note, became a *teevra-teevra gandhara*. The original sense of *sivarasadharana* implying 24 cents shifts was lost and 180 cents shifts took its place.

The reason may be that when scales began to be described all together in steps on one string, the need for more than one *grama* no longer existed: it is the *madhyamagrama* (and perhaps also the *gandhara grama*) which enabled the location of *vikrita* notes in *shadjagrama*, but when *vikrita* notes themselves began to be specified as so many *shrutis* above or below a main note, there did not appear to be any need to refer to the *grams* as such, 24 cents were of course unavoidable, but they arose through 180 cents, or 114 cents shift, and not by themselves as such.

It was also realised that specification of many *shruti* positions in this manner was musically unfruitful. Hence some authors decided not to give separately the positions of so many *shruti* notes, but to concentrate on the main ones. Thus it was realised that *antara-gandhara*, which in its new sense had become a *teevra* note, had better be 'represented' by the main note $Ga\ 8$ (408 cents). This is the position accepted by Venkatamakhi (1600 A.D.). The total number of specific *shuddha* and *vikrita* notes thus remained at 12. Even Ahobala, who gave so many notes as *purva*, *komala*, *teevra*, *teevratara* and *teevratawa*, says towards the close of his book (1600 A.D.) that out of the list of fifteen *vikrita* notes he does not employ ten in music.

Ahobala and Venkatamakhi have tried to specify their notes by string-lengths. We have every justification to assume that an error of $\pm$ or $- 1/5$ th of an inch is quite possible in such specification. The lengths are given as so much portion of so much portion, which introduces a further indeterminacy, for all ratios within an octave, of whatever temperament, cannot be described by simple parts (thus for example, $16/15$). Even so, such notes come surprisingly close to the ones we have calculated. There has been a lot of discussion about Ahobala's *shuddha Re*, for example, and it has been asserted that his *shuddha Re* was on 204 cents. The original wording, after saying that *shuddha Pa* is $1/3$ of the length from the nut (*neru*), says, "*Re* is to be placed in the first portion *Sa* and *Pa*". If the string length is 36," *Pa* is 12", from the nut. This 12" section divided into three, gives the first portion as 4". The middle of 4" is 2" from the nut, giving a vibrating length of $36" - 2" = 34"$. The corresponding ratio is $36/34 = 18/17 = 99$ cents. The allowable error of $\pm$ or $- 1/5$ " gives a range of 1.8" to 2.2" from the nut; and we know that 1.83" will give $256/243$ (90 cents), 1.87" will give $16/15$ (92 cents), 2.25" will give $16/15$ (112 cents), and 2.29" will give 114 cents. Ahobala's position for *Re* can therefore be said to be between 90 and 114 cents, greater accuracy is not justified; but in any case there is no need to insist that Ahobala's *Re* was 204 cents, i.e. on a point 4" from the nut. This 4" is the end of the first portion and the beginning of the second portion, and the wording just says 'in the first portion'. Why be dogmatic and insist on 4"? The reason must be an obsession with the word *shuddha* as meaning the modern *teevra*.

Ramamatya has described frets on his *vina*, whose open strings are tuned to *Sa* 0, *Ma* 9 and *Pa* 13. On checking with this description again the above analysis tallies.

		Optional						
Strings/Frets.		2	3	4	5	5A	6	7
<i>Sa</i> 0	<i>Re</i> 3	<i>Ga</i> 5	<i>Ga</i> 6	<i>Ga</i> 8	<i>Ma</i> 9	<i>Ma</i> 10	<i>Ma</i> 12	<i>Pa</i> 13
<i>Pa</i> 13	<i>Dha</i> 16	<i>Ni</i> 18	<i>Ni</i> 19	<i>Ch. Sa</i>	<i>Sa</i> 22	<i>Re</i> 1	<i>Re</i> 3	" <i>Ga</i> 4"
		<i>Kai</i>		21				
<i>Ma</i> 9	<i>Ch. Pa</i> 12	*	*	<i>Dha</i> 16	<i>Ni</i> 18	<i>Ni</i> 19	<i>Ch. Sa</i>	<i>Sa</i> 22
						<i>Kai</i>	21	

* This fret is not to be sounded.

A detailed analysis of each book is not possible here, but the above will amply indicate the general thesis. It is as follows:

1. Right upto 1700 A.D., the *shuddha swaras* were the same. These correspond to our present day *komala* (except for *Sa* and *Pa*). At no time did *shuddha* mean our present *teevra*.
2. The main *vikrita* positions remained the same, but the way of describing them changed round about 1400. We refer to the *shruti* positions 4, 8, 12, 17 and 21. In Bharata's time they were obtainable by *murchchanas*. When the *gandhara grama* was considered, these *vikritas* cropped up. When more than one *grama* was not used, these *vikritas* were described only by flattening of one *shruti* of the *shuddha* notes, 5, 9, 13, 18 and 22.
3. The other *vikritas*, though many in Bharata's time were specifically only two: *antara gandhara* and *kakali nishada*. They were obtained by 24 cents' shifts necessitated by correspondence of the two *gramas*. A *Re* 1 and *Dha* 14 was also described without name. It was laid down that this 24 cents—2 *shruti*-shift can be made throughout the Octave to get 204 cents' intervals (4 *shrutis*) as various steps.

Sharangdeva performed this operation over the whole Octave, and, obtaining 12 *vikritas*, gave them various names: *chyuta*, *vikrita*, *antara*, *kakali*, *sadharana* and *kaishika*. The *chyuta*, *sadharana* and *kaishika* came in as new terms for notes.

Round about 1400 A.D., objections to Sharangdeva's numeration were raised on the basis that notes, in order to be properly called *vikrita*, must sound different; also that the open-string note being invariable, its note should not have two names. The tendency thus arose to regard *chyuta shadja* as a variety of *Ni*, and so on; also to reduce the number of specified main *vikrita* notes. 5 main *vikritas* were thus finally recognized. The others did exist but only as occasional notes. This outlook had the following effects:

1. *Sa*, and *Pa* came to stay as fixed *shuddhas* in *shadjagrama* and *Sa* and *Ma* as fixed for *madhyamagrama*.

2. Notes begin to be described as *vikrita* by their *shruti* intervals from *shuddha* notes alone, thus more than one *grama* was not necessary.
3. As a consequence, the original 24-cent temperament was replaced by 180 cents' temperament.
4. *Antara gandhara*, a *komala swara* in Bharata's time became a *teevra*, and *kakali nishada* also a *teevra*. It was also proposed to amalgamate these with the nearest *teevras* on positions 8 and 21.
5. The various *vikritas* were given various names by various authors, and the words *teevra*, *teevratar*, *mridu*, *komala*, *purva*, *panchashruti*, *shatshruti*, came to be coined. But the main structure remained the same. The only result was a confusion of terminology, so that one has to be very careful in reading any particular author and ensure that one sticks to that particular author's terminology only in so far as that author is under consideration. This did not effect the *shuddha* notes.
6. Hence we draw the conclusion that no cleavage ever occurred in the terminology and scale structure of North and South India. (The confusion exists only in the minds of our theorists).
7. What then about the Muslim invasion? It came about 1300 A.D. i.e. after Sharangdeo and before Kallinath's commentary thereon. Sultan Hussain Sharki had introduced the *Khayal*, and the various *Nayaks* like Bakshu, Dhondu and Bhagwan under Raja Mansingh were following the new *Dhrupadas*, just before Ramamatya. Tansen's time corresponds with Damodar, Pundarika Vitthal, Ahobala, Somnath, Venkata-mukhi etc. Then came Jehangir's and Shahjehan's reigns. (It was only in Aurangzeb's time, the time of Bhava Bhatta, that in Delhi music was looked upon with disfavour. Soon after Gulam Rasul, Miya Shouri, Sadaranga, Adaranga etc. rose up with the new *Khayal* and *Tappa*.) How is it that despite these political upheavals we find no major revolution in our scale structure?

The only logical answer is, the Muslim invasion did not touch the structure. Muslims may have imported the new way of

looking at the scale and thus influenced the withdrawal from the two (or 3) *gramas* and the *swarasadhana* system. The method of specifying *shuddha* and *vikrita* notes as degrees of only one octave may have been due to Muslims. They may have brought in new styles of singing and playing, new embellishments in melody. But the scale system basically was left unchanged, whether in the North or in the South. And the Muslims may have brought in the custom of singing to the drone of the *tambura*, thus putting into the back ground the *murchhana* system, and making *Sa* and *Pa* invariable notes. As a consequence it is possible that since the *tambura* drone is partial to *Sa* 0, *Pa* 13, *Re* 4, *Ga* 8, *Ni* 21, the *teevra swaras* came more into prominence, so that the basic scale may have come to be regarded not as that of *Bhairavi* but as that of *Kalyana* or of *Bilawal*. (This means that the order of *murchchanas* changed: the basic scale instead of : *Sa* 1, *Re* 4, *Ga* 4, *Ma* 9/4, *Pa* 13/1, *Dha* 14/4, *Ni* 18/4, *Sa* 22 was regarded as *Sa* 0/4, *Re* 4/4, *Ga* 8/4, *Ma* 12/1, *Pa* 13/4, *Dha* 17/4, *Ni* 21/1, *Sa* 22 or as *Sa* 0/4, *Re* 4/4, *Ga* 8/1, *Ma* 9/4, *Pa* 13/4, *Dha* 17/4, *Ni* 21/1, *Sa* 22.

8. If there was a change in the basic scale as suggested above, an extra confusion is likely to have been introduced in the *raga* descriptions of latter-day authors, especially after 1500 A.D. and these authors must be read with closer attention to terminology when they mention, not *shuddha* but *vikrita* notes under various names.

It is this confusion that comes in the way of our tallying the notes given by latter-day authors for the various *ragas* with our present-day notes. Proper interpretation of terminology is called for in this case, not an assumption that everything has turned topsy-turvy. It is highly improbable that the *graha-ansha-alapa* system remained, the names of the *ragas* also remained as of old, but the *ragas* themselves changed!

That the names of *ragas* are different in South India may be attributed to differences in dialect; because the proportion of *ragas* of one name being sung differently in the two regions of India is low compared to the names themselves being different.

The substance of the thesis therefore is that the tradition of Indian music is continuous and unbroken: an evolution being of course inevitable.

This thesis runs contrary to the prevailing 'theory' that the Muslim invasion about 1300 A.D. brought a major upheaval in music itself; that the old terminology, scale structure, *raga* systems, all underwent a change in North India while the South remained true to old tradition; that the North Indian authors after 1400 A.D. do not tally with South Indian authors, that many of them do not know what they are writing, that the old *shuddha* now means *teevra*, and so on. This 'theory' and its presentation does not stand the test of logical reason as Kapileshwari's thesis does. He first fixes the old system and makes deductions, whereas others start with preconceived notions and adjust facts to suit their hypothesis.

We conclude: To-day's music has a direct link with the past. We have only to bear in mind that the art form has developed by evolution. The basis is unchanged.

The Raga System

The present-day *ragas* are therefore descendents of the old *jatis* and *prabandhas*.

A *raga* has ten essential characteristics: — *graha*, the starting note; 2. *ansha*, the main note; 3. *nyasa*, the concluding note (also *apanyasa* and *vinyasa*, the notes on which phrases end); 4. *alpatva*, the smallness of 'value' (in terms of *laya* or duration) of certain notes; 5. *bahutva*, the largeness of value of certain notes; 6. *ouduvatva*, whether the *raga* takes only 5 notes; 7. *shadavatva*, where it takes 6 notes. 8. *tara*, how far the notes rise in the upper register; 9. *mandra*, how far the notes go into the lower register; 10. *murchhana*, which fixes the sharpness or flatness of the notes.

Now, we have no factual data to show how the *jatis*, *prabandhas* etc. were sung or played in the old days. The latter day books describe *ragas* only by their scales and by giving their *graha*, *ansha* and *nyasa*; the detailed melodic progressions are unknown. We can only examine to-day's progressions and see how far the above characteristics are followed:

The *murchhana* fixes the *komal-teevra* *svaras*. We have however given up the *murchhana* system. Furthermore, in our present-day music we have many *ragas* like *Bhairava*, *Khat*, *Todi*, *Patamanjari*, *Pilu*, *Marwa*, *Puria*, *Puriadhanasri*, *Darbari*, *Paraj* etc., which do not fit in the seven main *murchhanas* because of their notes not forming intervals of 1-4 *shruti* steps, or because they have other auxiliary notes, or because their ascents and descents are not uniform. We therefore have to specify the notes of our *ragas*, not the *murchhanas*. We have to state their *shruti* values (e.g. the *Re* of *Bhairava* as against the *Re* of *Bhairavi* etc.), and the order in which the notes have to follow each other in the skeleton scale (e.g. *Sa — Ma — Ga — Pa* or *Sa — Ga — Ma — Pa* in *Bihag* and *Tilang*, *Sa — Ga — Re — Sa* — and *Sa — Re — Ga* in *Kafi* and *Bhimpalasi* etc.).

The *tara mandra* rule is also followed strictly. No one sings *Darbari* going high up in the treble octave, and to sing *Basant* in the bass side only would be ridiculous.

The *ouduvatva — shadavatava* rule is also followed. Take for example *Bhupali*, *Malkos*, *Malashri* or *Durga*. The notes are prescribed, but we go by smooth transition from note to note—our music is not pure melody of single notes standing by themselves. In our melodic progression we have to glide over intermediate notes which do not belong to the *raga*, and we arrange the glide in such a manner that in *Bhupali* there is no trace of a *komala* note or in *Malkos* there is no trace of a *teevra* *svara*. Furthermore, we seldom take 4 *shruti* successions, because in *ouduva* and *shadava* *ragas* 5 and 8 *shruti* intervals are bound to arise. We show these 5 and 8 *shruti* intervals, as well as 9 and 13 *shrutis*, i.e. we follow the *samvadi* rules. For example in *Durga*, *Sa — Ma — Re — Pa*, *Dha — Ma — Pa*, is regarded as far better representing the *raga* than straight *Sa — Re — Ma — Pa*. In the former case the *shruti* steps are 9—5 9; 4 — 8 — 4; in the latter case they are 4 — 5 — 4.

As regards *graha-ansha* and *nyasa*, we find that in a *raga* there is such a triad. The intervals between them are any three out of 13, 9, 8 and 5. If one of these is the *ansha* (some call it *vadi*), the *graha* and *ansha* are 13, 8, 8 or 5 *shrutis* above or below it. The choice is governed by the tune, the words in song, and the tempo. There is not just one specific *ansha*

(*vadi*) for one *raga*: a *raga* can have any one of three notes as *ansha*, and the remaining two are the *graha* and *nyasa*.

Alpatva and *Bahutva*, called *swaralaya*, are the essence of our melodic progression. In *Bhupali*, if each note is of 1 time unit (*matra*), the ascent lengthens the *Ga* to 2 units, the *Pa* to 2 units; but in descent the *Dha* is 2 units, and *Pa* only 1 unit. If the *Pa* is lengthened to 2 units (*bahutva*) in descent the *Bhupali* will degenerate into *Deskar*. A better illustration will be found in determining the *alpatva* and *bahutva* of the *Dha*, *Re* and *Ga* of *Bhairavi* and *Bilaskhani*. Had this *alpatva* and *bahutva* not been there, there would be very little indeed left to distinguish *Bhairavi* from *Bilaskhani*. *Khamaj* and *Tilang* and *Zinjoti* would provide another instance. It is not merely what notes are taken in a *raga* that characterise it; — we even take a *teevra Ni* in *Kafi* and it sounds good — nor the order in which they are taken—we sometimes do proceed *Sa — Re — Ga — Ma* in *Bhimpalas* — but the main thing is, how much relative time, large or small, do we give to the various notes; i.e. what is the ‘value’ of each note. If the various values are not observed the *raga* fails. This ‘*swaralaya*’ is the crux of melodic progressions.

All this can be easily proved by analysing the musical phrases of past masters.

The dynamics of our music thus rests on two main pillars: the *samvadi* rule of 13, 9, 5 and 8 *shrutis*, and the *swaralaya* principle. When the *samvadi* rule is not observed we get a mere skeleton and when the proper *swaralaya* is not observed we get a caricature of music.

The present-day ‘systems’ of music prevalent in our schools specify: (1) The ‘*that*’ of a *raga*, i.e. its pigeonhole in a classification-system of notes according to *teevra* and *komala*; (2) the *vadi* and *samvadi*, i.e. the note used most often, and the note used next often; (3) *anga*, i.e. whether the upper four notes prevail or the lower-four, (4) *chalan* i.e. the order of the notes, (5) the time of the day at which the *raga* is sung. Then follow exercises on scales which form the *alapa* and *taans* in actual singing afterwards.

All this is merely a partial view. We shall not go into the merits or otherwise of the that system, but knowing to which particular pigeon-

hole a *raga* belongs gives no idea of the fine *shruti* intervals; the *Re* of *Bhairavi* and of *Bhairava* have to be discriminated. Merely saying the two are 'different' does not help saying the one is fixed and the other a vibrato (*andolita*) is far from correct, and saying one takes a 'grace note' shows that the meaning of 'grace notes' is being distorted. Second point: It can be shown that the rule "one *raga*, one *vadi*" is not correct. Third point: besides the *anga*, the *mandra-tara* range has to be specified. Fourth-point: *Chalana* must not mean acrobatical ups and downs. The *svaralaya* and *samvadi* rule must be specifically shown.

In the absence of the observation of the proper principles of *raga* singing, embellishments of *meend*, *ghasit*, *khatka*, *kampa*, *murki* etc. are neglected, and these form the main attraction of our music. All that remains is acrobatics on the ladder of fixed notes, up and down. This is not music.

The time of the day is given in the old books, but it is a moot point whether in the modern context it can or need be observed. A melancholy *raga* suits a melancholy mood, and such a mood need not necessarily exist in the evenings in the month of *Shravana* if one lives in a city like Bombay or Delhi.

The place of rhythm in our music is not properly presented in our prevalent 'systems'. Rhythm must form an integral inseparable part of the melodic progression, and the beat must not encroach upon the sentiment. What do we find instead? While the acrobatics are going on, rhythm hardly matters and when the jugglery of trills is over, rhythm takes over and bursts into the music. Words are distorted and sung to the fractional parts of the rhythmic beat, so that not only the meaning but even pronunciation is reduced to a mockery. Only that music can appeal in which words, meaning, notes, their consonances and musical melodic progression, the *svaralaya* and *tal* (rhythm), all go hand in hand to make an integral whole. Our prevalent systems completely ignore this fundamental fact.

Much depends upon words: Spanish and Italian vocal music is more melodious than English or German because of the predominance of vowels. Similarly the *alapa* of South Indian Music is different in

texture because of the predominance of consonants in the Southern dialects. Hindi (Vraj and its varieties) are adaptable to the *alapa* of North Indian music more than other dialects because of the predominance of the vowels and their adaptability (thus: *pi*, *piya*, *piyara* etc.).

Our Notation System

It is supposed that notation is something new in this country. This is not correct. In singing, the *tarana* and *chaturanga* form sung by most musicians, includes pronunciation of the notes among other things; and at least two traditions of hereditary musicians, the *Kirana* (represented by Bande Ali, Abdul Karim Khan, Haidar Bux etc.) and the *Muradabadi*, wrongly called '*Bhendi Bazar*' (represented by Nazir Khan, Chaju Khan, Khadim Hussain, Aman Ali etc.) actually teaches *alapa* by notation. In South India singing notation is common. Older demonstrations are of course not available to-day for lack of recordings, but we have the old writings. Such books have the serial numbers of *shruti* notes written on top of letters, and in as old a book as that of Sharangdeva we find a detailed description of a written notation system.

It is important to note that this old notation of Sharangdeva attaches great value to the duration of each note: he describes various signs to indicate multiples of a time-unit (*matra*) and fractions thereof. These fractions are on the system of even division (*laghu-guna*) or uneven division (*pluta*).

The latter day writers however seem to have concentrated more on giving short descriptions of a huge number of *ragas* under some pigeon-hole system or another; such descriptions do not help us in finding out how a given *raga* was actually sung or played with its various note-values (durations), the pauses (*virama*) which are very important for the art of music, the embellishments and so on. These descriptions therefore can at the most serve as a dictionary and not as sources of musical score.

After 1800 A.D. the question of notation again came up with the spread of printed literature. The first writings were those of curious, sympathetic and research-minded scholars like Sir William Jones, Capt. Day, Mr. Willard, Mr. Fox Strangeways, Mr. Popley and so on.

They of course used the staff notation. This practice was followed by Surendramohan Thakur.

The chief merit of the staff notation is that it directly gives duration of note-values as an integral part. It is also a visual chart. However, the notes represented by the staff notation have to be suitably re-marked to fit our *shruti* system or *komala-teevra* system. For example C sharp is 3 *shrutis* and D flat is 1 *shruti* (very nearly). We have also to use double-sharps and double-flats. Further, for our *teevra* Ga on the 8th *shruti* we have to use, not E, nor F flat, but a special sign, for our *teevra* Ga is only a comma higher than E whereas F will be nearly the just E of 384—386 cents which is our old *sadharana* Ga-6. Again the melodic progression by embellishments needs further special notes; and special bars and signs become necessary to indicate the various parts and stresses of the rhythm such as *jati*, *khanda*, *anga*, *sama*, *khali* etc. All this can of course be done; but the result is a new complex system which our musicians do not relish because there are too many things to relearn, because they play or sing by ear and not sight, and because the connection of the signs with the *Sol-fa* (*sa-re-ga-ma*) no longer exists. Hence the staff notation was judged unsuitable for Indian music.

Pt. Vishnu Digambar revived the staff idea but in doing so he neglected the essential merits of it. These, for Indian music, are two: the staff notation would enable by modulation, a revival of the *murchhana* idea and this might give new ideas in the development of *ragas*; and the staff notation would impress upon everybody the essential fact that *swaralaya* is an integral part of melody. Vishnu Digambar separated the note-values, gave them special signs modified from Sarangdeva, and wrote these note-values below the staff. Though this was done in order to accommodate the *tala* (rhythm) complexities and the *swaralaya*, the integration was lost. Pt. Vishnu Digambar's staff therefore had no special merit and he himself gave it up.

Pt. Bhatkhande adopted the sol-fa system as such, and made the notation a simple affair. Signs were provided for the three registers and the *komala-teevra* modifications, and bars to indicate the parts of a rhythm and the stresses (*khanda*, *sama*, *tali* and *khali*). But no provision was made for note-values (*swaralaya*), so the system became a skeletal

structure only. *Meenda*, *khataka*, *murki*, *ghasit*, upper or lower *shruti*-touches (which are not *kanas* or grace-notes but minute touches with glides) were not provided for and in any case their values were indeterminate within the tune-unit. It became possible for two persons to read the same notation with different intonation. This skeletalisation, along with confused terminology (today's *teevra* = old *shuddha*, *shuddha* also means *teevra*, but *shuddha Ma* is not *teevra* but *komala*, *teevra madhyama* is higher than *shuddha madhyama* but *teevra gandhara* is not higher than *shuddha gandhara* because the two are the same), came in the way of anything like a correct record of melodic forms. (The music based on a teaching on such basis is certain to be imperfect but because powerful agencies like the AIR have given preference to this system and have based their judgements and tests on such systems this music has gained popularity and Gresham's law has operated to the detriment of good music).

Abdul Karim Khan initially started with signs for note-values to indicate *swaralaya*, but later on decided, in the interests of simplicity, to write the values below the notes by means of actual fractions such as $1/2$, $1/4$, $1/3$, $1/5$, $1/8$, $4/4$, $7/8$ etc. He also did away with the confusion created by the *komala-shuddha-teevra* problem by dropping the name *shuddha* altogether and sticking to the *teevra-komala* classification, reserving the name *shuddha* only when referring to *komala* notes (except *Sa* and *Pa*) when they occur in old books. In other respects, he decided to follow Bhattachande's ideas for three reasons: their simplicity, and their wide acceptance, and because he wished uniformity in the country.

Kapileshwari's stand, therefore as based on Abdul Karim's precepts, is that in any notation system the sol-fa must exist, the notes must be specified not only as *komala* and *teevra* but as such and such a grade of *komala* or *teevra*, by specifying *shruti*-intervals or *shruti*-positions, signs must be provided for the embellishments of upper and lower *shruti*-touch, upper and lower *kana*, *meenda*, *ghasit*, *murki*, *fanda*, *zanzama*, *gamak*, etc., and above all, the *swaralaya* must be distinctly shown as an inseparable part of the *swara* — the *ga-re-sa* of *Shankara* and of *Yaman* must be capable of being distinguished from one another; this is an affair apart from the rhythm or *tala* as such, and for the *tala* itself, means have to be provided to denote the *khanda* and *anga*, the bars, the *sama*, the *tali*

and the *khali*. The closer approach to this ideal the better the notation, but *swara-laya* is a basic requirement in any case, failing which we shall have nothing but skeletons which can be interpreted in any way we like. Even short and long pauses must be marked with the durations allotted to them.

And above all the confusion the *shuddha Ma* as the *Sa* as *komala Ma* but *shuddha Re, Ga, Dha, Ni* the same as *teevra Re, Ga, Dha, Ni, teevra Ma* being a note higher than *shuddha Ma*, must be eliminated. The most logical way is to propose that —

- (1) the *Sa* and *Pa* are to-day invariable on the 0 and 13th *shrutis*;
- (2) the old *shuddha Re, Ga, Ma, Dha, Ni* are to-days *komala* (not *teevra*) notes as found in *Bhairavi*, on *shrutis* 1, 5, 9, 14 and 18;
- (3) Old *chyutapanchama* is to-day's *steevra Ma*, and similarly to-day's *teevra Re, Ga, Ma, Dha, Ni* as found in *Kalyana* on positions 4, 8, 12, 17, 21, are the old *chyuta Ga, Ma, Pa, Ni, Sa*;
- (4) We should not therefore use the word *shuddha* in the context of to-day's scales;
- (5) Where certain *ragas* like *Bhairava, Todi*, etc., necessitate other notes such as *Re* 3, *Ga* 7, *Ga* 6, *Ni* 20, *Ni* 19, *Dha* 16 etc. the *shruti-intervals* of these notes should be specified. Thus *Bhairava* takes *shrutis* 0, 3, 8, 9; 13, 16, 21, 22 with intervals 3, 5, 1, 4, 3, 5, 1 and so on. These points have been elaborated and demonstrated in Kapileshwari's book *Shrutidarshan* in Marathi.

The above system has been actually tested in the educational schools, run on the person-to-person (Gurukul) basis started by Abdul Karim Khan and being run till now, over a period of 55 years.

To Sum Up

This research work establishes the laws on which our ancient scale system was based, in terms of modern terminology; and incidentally also establishes what were the three *gramas* and what useful purpose they served. It also develops the *grama* system on which singing and playing of the ancient *jatis* and *prabandhas* were based.

It establishes that the theoretical basis of scale building has remained unaltered till to-day, that there has been no major upheaval because of Muslim invasion and domination; that the basis of South Indian Music is the same as that of the rest of India.

It connects the modern notes with the ancient notes.

It establishes the laws of melodic composition and melodic progression in our country, on which the *jati-prabandha-raga* system is based.

It describes the characteristic essentials of a *raga* and shows that these are essentially the same as those laid down in the olden days. It stresses the basic inseparability of tone progression with note-values (duration or *laya*).

All this is supported by observation, experiment, demonstration, musical theory, the laws of physical and physiological accoustics, and the ancient texts.

It indicates what an ideal notation system should be like for our music, and what should serve as the guide-lines for the teaching and exposition of real classical music.

Incidentally, in doing so, it does away with the presumption that 'classical' music is something apart from our daily sphere: all Indian music obeys the same basic laws; all Indian music is strictly melodious, and there is no reason for it to fall from grace.

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“The wise do not sanction a fourth delivery even in a season of distress”, said Kunti.

(Mahabharata, Sambhava Parva)

When Pandu desired to have more children after the birth of Arjuna, the third Pandava, Kunti reminded the King that a fourth delivery was not sanctioned by the wise. Times have changed, as also the social customs and values; but the words of the celebrated queen have not lost their significance. In fact they have acquired a new meaning today, in a different context. Today “the wise do not sanction a fourth delivery” because they do not want more children than they can provide for. With

fewer children, each child gets better care, enough food and more opportunities for a happy life. Having many pregnancies is also harmful to the mother's health.

You can stop having more children, and you can also delay having them until the time you want them. Please visit the nearest Family

Planning Centre. Services are available free of charge.



a small family is a happy family

नातश्चतुर्थं प्रसवमापत्स्वपि वदन्त्युत

